मध्यप्रदेश लोक सेवा आयोग
रेसीडेन्सी एरिया
इन्दौर

क्रमांक : 753 / 69 / 2011 / प–9 इन्दौर, दिनांक– 23/09/2016

–:: विज्ञप्ति ::–

राज्य अभियांत्रिकी सेवा प्रांरभिक परीक्षा–2016 के संदर्भ में आयोग द्वारा जारी विज्ञप्ति क्रमांक 656 / 69 / 2011 / प.–9 दिनांक 21.08.2016 के अंतर्गत प्रावधिक उत्तर कुंजी परीक्षा परिणाम बनाने के पूर्व आयोग की वेबसाईट पर प्रकाशित की गई थी। अभ्यर्थियों से प्राप्त ऑनलाईन अभ्यावेदनों का विषय विशेषज्ञों द्वारा परीक्षण किया गया तथा समस्त ऑनलाईन आपत्तियों का सूक्ष्म परीक्षण करने के पश्चात प्रथम एवं द्वितीय प्रश्न पत्रों की अनुशंसित संशोधित उत्तर कुंजी बनाई गई है। यह अंतिम उत्तर कुंजी है। इस उत्तर कुंजी के आधार पर परीक्षा परिणाम तैयार किया जा रहा है। अब किसी अभ्यावेदन पर विचार नहीं किया जायेगा। अभ्यर्थी आयोग की वेबसाईट पर अपना रोल नंबर एवं प्रवेश पत्र पर दिये गये पासवर्ड की सहायता से लॉग–इन कर अपनी रिस्पांस शीट का अवलोकन कर सकते हैं। यह विज्ञप्ति आयोग की वेबसाईट www.mppsc.nic.in, www.mppsc.com & www.mppscdemo.in पर दिनांक 23.09.2016 से उपलब्ध है।

(डॉ. आर.आर. कान्हेरे)
परीक्षा नियंत्रक

State Engineering Services (Prelims) Exam – 2016

First Paper – First Shift

(Provisional Model Answer Key)

Q.No: 1	Purna, Girna, Bori and Shiva are tributaries of which river _____	पूरणा, गिरना, बोरी एवं शिवा नदियां किस नदी की सहायक नदियां हैं
A	Tawa	तवा
B	Narmada	नर्मदा
C	Son	सोन
D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**D**	

Q.No: 2	According to 2011 census the two districts of M.P having maximum and minimum literacy percentage of females are:	मध्यप्रदेश में जनगणना 2011 अनुसार सर्वाधिक महिला साक्षरता प्रतिशत एवं न्यूनतम महिला साक्षरता प्रतिशत वाले जिले हैं -
A	Jabalpur, Jhabua	जबलपुर-झाबुआ
B	Indore, Alirajpur	इन्दौर-अलीराजपुर
C	Bhopal, Alirajpur	भोपाल-अलीराजपुर
D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**C**	

Q.No: 3	The correct sequence of districts in decreasing order of area is	क्षेत्रफल के घटते क्रम में जिलों का सही क्रम है__
A	Chhindwada, Shivpuri, Betul , Sagar	छिन्दवाड़ा,शिवपुरी, बैतूल , सागर
B	Chhindwada, Shivpuri, Sagar, Betul	छिन्दवाड़ा , शिवपुरी ,सागर, बैतूल
C	Chhindwada, Sagar, Shivpuri, Betul	छिन्दवाड़ा, सागर , शिवपुरी ,बैतूल
D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**C**	

Q.No: 4	The main river/rivers of Bundel khand Plateau	बुन्देलखण्ड के पठार की प्रमुख नदी/नदियां हैं -
A	Betwa	बेतवा
B	Dhasan	धसान
C	Ken	केन
D	All are correct	सभी सही
Correct Answer	**D**	

Q.No: 5	Who defeated Gwalior emperor Vikramajit Tomar in 1517	1517 में ग्वालियर के राजा विक्रमाजीत तोमर को किसने हराया ?
A	Ibrahim lodhi	इब्राहिम लोधी
B	Shershah soori	शेरशाह सूरी
C	Mohd-bin-tuglaq	मुहम्मदबिन तुगलक
D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**A**	

Q.No: 6	How much total area of Narmada basin?	नर्मदा बेसिन का कुल क्षेत्रफल कितना है ?
A	78,289 sq.km	78289 वर्ग कि.मी.
B	98,796 sq.km	98796 वर्ग कि.मी.
C	96,000 sq.km	96000 वर्ग कि.मी.
D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**B**	

Q.No: 7	In which part of M.P Bandhavgarh national park is situated.	बांधवगढ़ राष्ट्रीय उद्यान मध्यप्रदेश के किस क्षेत्र में स्थित है -
A	BundelKhand	बुन्देलखण्ड
B	Central India	मध्यभारत
C	BaghelKhand	बघेलखण्ड
D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**C**	

Q.No: 8	In Mourya Period the western part of Malwa was known as Awantika whose capital was Ujjain and eastern part was known as Akra whose capital was	मौर्ययुग में मालवा का पश्चिमी भाग अवन्तिका कहलाता था जिसकी राजधानी उज्जैन थी तथा पूर्वी भाग अकरा कहलाता था जिसकी राजधानी थी -
A	Vidisha	विदिशा
B	Raisen	रायसेन
C	Bhopal	भोपाल
D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**A**	

Q.No: 9	The C.M helpline number in M.P is	मध्यप्रदेश में सी.एम. हेल्पलाइन नम्बर है -
A	139	139
B	181	181
C	180	180
D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**B**	

Q.No: 10	Son of Naresh Mandhata who defeated Gandharvs is	नरेश मान्धाता के पुत्र जिसने गन्धर्वों को हराया है -
A	Muchukund	मुचुकुन्द
B	Purukuts	पुरुकुत्स
C	Kirtvirya	कीर्तवीर्य
D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**B**	

Q.No: 11	Ancient name of Damoh was	दमोह का प्राचीन नाम था -
A	Dasharn	दशार्ण
B	Tundiker	तुंडीकेर
C	Vats	वत्स
D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**B**	

Q.No: 12	Kandariya Mahadev temple was situated in	कान्दरिया महादेव मंदिर स्थित है -
A	Khajuraho	खजुराहो
B	Dhar	धार
C	Mandu	माण्डू
D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**A**	

Q.No: 13	Rani Awantibai is related to which place	रानी अवन्तिबाई का सम्बन्ध कहां से है -
A	Ramgarh(Mandla)	रामगढ़ (मण्डला)
B	Jabalpur	जबलपुर
C	Katni	कटनी
D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**A**	

Q.No: 14	When Shahid Chandrashekhar Azad was born in Bhabhra (Alirajpur)?	शहीद चन्द्रशेखर आजाद का जन्म भाबरा(अलीराजपुर) में कब हुआ था ?
A	23rd July 1905	23 जुलाई 1905
B	23rd July 1907	23 जुलाई 1907
C	23rd July 1906	23 जुलाई 1906
D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**C**	

Q.No: 15	Amjhera regime is related to which district	अमझेरा रियासत का सम्बन्ध किस जिले से है ?
A	Jhabua	झाबुआ
B	Dhar	धार
C	Khangone	खरगोन
D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**B**	

Q.No: 16	In year 2009 which of the following "Kinnar" elected as mayor of Sagar municipal corporation	सन 2009 में सागर नगर निगम के महापौर पद पर कौन किन्नर निर्वाचित हुई थीं ?
A	Shabnam Mausi	शबनम मौसी
B	Kamla John urf Kamla Mausi	कमला जॉन उर्फ कमला मौसी
C	Kamla bua	कमला बुआ
D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**C**	

Q.No: 17	Whose main writtings are "Kaviraj Ki Kundaliyan, Death or Murder and Amar Balidan"	''कविराज की कुंडलियां, मृत्यु अथवा हत्या और अमर बलिदान'' किसकी प्रमुख कृतियाँ हैं ?
A	Ramdhari Singh Dinkar	रामधारी सिंह दिनकर
B	Subhadra Kumari Chouhan	सुभद्रा कुमारी चौहान
C	Atal Behari Vajpai	अटल बिहारी वाजपेई
D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**C**	

Q.No: 18	Samir dad is related to which game	समीर दाद का सम्बन्ध किस खेल से है -
A	Cricket	क्रिकेट
B	Hockey	हॉकी
C	Football	फुटबाल
D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**B**	

Q.No: 19	Where was Dhrupad singer kumar gandharv born?	धुपद गायक कुमार गन्धर्व का जन्म कहाँ हुआ था?
A	Madhya Pradesh	मध्यप्रदेश
B	Karnataka	कर्नाटक
C	Chhattisgarh	छत्तीसगढ़
D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**B**	

Q.No: 20	Who is known as "Kathin Kavya Ka Pret"	''कठिन काव्य का प्रेत'' से किस व्यक्ति को जाना जाता है ?
A	Kavi Keshavdas	कवि केशवदास
B	Kamta Prasad Guru	कामता प्रसाद गुरु
C	Makhanlal Chaturvedi	माखनलाल चतुर्वेदी
D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**A**	

Q.No: 21	How may districts are there in Jabalpur division?	जबलपुर संभाग में कितने जिले हैं ?
A	5	5
B	6	6
C	7	7
D	8	8
Correct Answer	**D**	

Q.No: 22	Which city of M.P is known as the "City Of Joy"	मध्यप्रदेश में ''सिटी ऑफ ज्वॉय'' के नाम से किसे जाना जाता है ?
A	Mandu	माण्डू
B	Ujjain	उज्जैन
C	Khajuraho	खजुराहो
D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**A**	

Q.No: 23	Where is Rock Phosphate found in M.P	मध्यप्रदेश में रॉक फास्फेट कहाँ पाया जाता है ?
A	Narasinhpur District	नरसिंहपुर जिले में
B	Jhabua District	झाबुआ जिले में
C	Bhind district	भिण्ड जिले में
D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**B**	

Q.No: 24	First women IPS officer of M.P service cadre is	मध्यप्रदेश सेवा संवर्ग की प्रथम महिला आय .पी. एस. अधिकारी हैं ?
A	Kiran Bedi	किरण बेदी
B	Asha Gopalan	आशा गोपालन
C	Sarla Grewal	सरला ग्रेवाल
D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**B**	

Q.No: 25	The biggest cave group of M.P is	मध्यप्रदेश का सबसे बड़ा गुफा समूह है :
A	Pandava Caves	पाण्डव गुफाऐं
B	Shankaracharya Caves	शंकराचार्य की गुफाऐं
C	Bhimbetka Caves	भीमबेटका की गुफाएँ
D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**C**	

Q.No: 26	Where is Tomb of Ghaus Mohammed in M.P?	मध्यप्रदेश में गौस मोहम्मद का मकबरा कहाँ है ?
A	Shivpuri	शिवपुरी
B	Bhopal	भोपाल
C	Gwalior	ग्वालियर
D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**C**	

Q.No: 27	Chhahur is folk dance of which region?	छाहुर किस क्षेत्र का लोकनृत्य है ?
A	BaghelKhand	बघेलखण्ड
B	BundelKhand	बुन्देलखण्ड
C	Malwa	मालवा
D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**A**	

Q.No: 28	Which of the following is not a literacy person of medival period?	निम्नलिखित में से कौन मध्यकाल के साहित्यकार नहीं हैं ?
A	Kumbhandas	कुम्भनदास
B	Gajadhar bhat	गजाधर भटट्
C	Gorelal purohit	गोरेलाल पुरोहित
D	Bhavbhuti	भवभूति
Correct Answer	**D**	

Q.No: 29	Parvati Parinay , Chandishatak and Mukut Taddik are written by	पार्वती परिणय, चण्डी शतक एवं मुकुट ताड़दिक लिखी गयी हैं -
A	Kalidas	कालीदास द्वारा
B	Keshavdas	केशवदास द्वारा
C	Padmakar Bhatt	पद्माकर भटट् द्वारा
D	Banbhatt	बाणभटट् द्वारा
Correct Answer	**D**	

Q.No: 30	When M.P Urdu academy is established in Bhopal ?	मध्यप्रदेश उर्दू अकादमी भोपाल की स्थापना कब की गयी ?
A	1966	1966
B	1976	1976
C	1989	1989
D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**B**	

Q.No: 31	First Tantya Bhil Samman in M.P is given to whom?	प्रथम टंटया भील सम्मान मध्यप्रदेश में किसे दिया गया ?
A	Rajaram Mourya	राजाराम मौर्य
B	Bheema Nayak	भीमा नायक
C	Shankarshah	शंकरशाह
D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**A**	

Q.No: 32	Korku schedule tribe of Panchmarhi region are known as	पंचमढ़ी क्षेत्र में रहने वाले कोरकू जनजाति के लोग कहलाते हैं -
A	Mowasi	मोवासी
B	Bawaria	बावरिया
C	Ruma	रुमा
D	Bandoria	बंदोरिया
Correct Answer	**D**	

Q.No: 33	The biggest and smallest National highways in M.P are	मध्यप्रदेश में सर्वाधिक लम्बा तथा सबसे छोटा राष्ट्रीय राजमार्ग हैं -
A	NH 3, NH 25	एन.एच-3 - एन.एच-25
B	NH 3, NH 27	एन.एच-3 - एन.एच-27
C	NH 3, NH 76	एन.एच-3 - एन.एच-76
D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**C**	

Q.No: 34	Where is Geo-Satelite Telecommunication discovery centre in M.P?	मध्यप्रदेश मे भू-उपग्रह दुरसंचार अन्वेषण केन्द्र कहॉ है ?
A	Bhopal	भोपाल
B	Indore	इन्दौर
C	Guna	गुना
D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**C**	

Q.No: 35	Who is the writer of book "Raha Kinare Baith"	''रहा किनारे बैठ'' पुस्तक के लेखक कौन हैं -
A	Subhadra kumari chouhan	सुभद्रा कुमारी चौहान
B	Shivmangal singh Suman	शिवमंगल सिंह सुमन
C	Keshvdas	केशवदास
D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**D**	

Q.No: 36	For the eligibility of Ladli Laxmi Yojna, the birth of girl should be	लाड़ली लक्ष्मी योजना के लिए पात्र बालिका का जन्म हुआ हो -
A	1 Jan 2006 or after	1 जनवरी 2006 या उसके बाद
B	1 Jan 2007 or after	1 जनवरी 2007 या उसके बाद
C	1 Jan 2008 or after	1 जनवरी 2008 या उसके बाद
D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**A**	

Q.No: 37	When Cheif Minister Gramsadak Yojna started in M.P ?	''मुख्यमंत्री ग्राम सड़क योजना'' मध्यप्रदेश में कब प्रारंभ की गयी ?
A	April 2010	अप्रेल-2010
B	April 2007	अप्रेल-2007
C	April 2008	अप्रेल-2008
D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**A**	

Q.No: 38	The birth date of Dr. Bheemrao Ambedkar (Indian constitution writter) is	संविधान निर्माता डॉ भीमराव अम्बेडकर का जन्म दिवस है -
A	14 April 1890	14 अप्रेल 1890
B	14 April 1891	14 अप्रेल 1891
C	14 April 1892	14 अप्रेल 1892
D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**B**	

Q.No: 39	When High Court in Madhyapradesh was established ?	मध्यप्रदेश में उच्च न्यायालय की स्थापना कब हुई ?
A	1884	1884
B	1882	1882
C	1887	1887
D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**D**	

Q.No: 40	Where is Alkalide Factory in M.P ?	मध्यप्रदेश में एल्केलाइड कारखाना कहॉ है ?
A	Neemuch	नीमच
B	Barwani	बड़वानी
C	Datia	दतिया
D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**A**	

Q.No: 41	Who is known as "Kabir of Music World"	''संगीत जगत का कबीर'' के रुप में कौन जाना जाता है ?
A	Tansen	तानसेन
B	Kumar Gardharva	कुमार गंधर्व
C	Ustad Alauddin Khan	उस्ताद अलाउद्दीन खाँ
D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**B**	

Q.No: 42	In "Devi Ahilya Samman" which is given to woman folk artist, how much amount is given	महिला लोक कलाकारों को दिये जाने वाले ''देवी अहिल्या सम्मान '' में कितनी राशि प्रदान की जाती है ?
A	Two Lakh	दो लाख
B	Three Lakh	तीन लाख
C	One Lakh	एक लाख
D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**A**	

Q.No: 43	"Narwar" the capital of Raja Nal is situated in which district of M.P?	राजा नल की राजधानी 'नरवर' मध्यप्रदेश के किस जिले में स्थित है ?
A	Gwalior	ग्वालियर
B	Datia	दतिया
C	Shivpuri	शिवपुरी
D	None of these are correct	इनमें से कोई सही नहीं

Correct Answer	**C**

Q.No: 44	The year of establishment of M.P Sanskrit Academy is	मध्यप्रदेश संस्कृत अकादमी का स्थापना वर्ष है -
A	1985	1985
B	1995	1995
C	1988	1988
D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**A**	

Q.No: 45	Where is "Bidesiya Songs" are sung?	''बिदेसिया गायन'' मध्यप्रदेश में कहाँ गाया जाता है ?
A	BundelKhand	बुन्देलखण्ड
B	BaghelKhand	बघेलखण्ड
C	Nimar	निमाड़
D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**B**	

Q.No: 46	The house of Bhils are known as ?	भीलों के मकानों को क्या कहा जाता है ?
A	Koo	कू
B	Hoo	हू
C	Soo	सू
D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**A**	

Q.No: 47	The agricultural method performed by the Bhills is known as	भीलों के द्वारा की जाने वाली कृषि को क्या कहते हैं ?
A	Chimata	चिमाता
B	Bewar	बैवार
C	Zooming	झूमिंग
D	Padhat	पढ़त
Correct Answer	**A**	

Q.No: 48	Which tribe performs Lahangi dance?	"लहंगी नृत्य" किस जनजाति का नृत्य है ?
A	Bhil	भील
B	Baiga	बैगा
C	Koul	कोल
D	Sahariya	सहरिया
Correct Answer	**D**	

Q.No: 49	Main god of Gond tribe is	गोंड जनजाति के प्रमुख देवता हैं -
A	Budha Dev	बूढ़ा देव
B	Thakur Dev	ठाकुर देव
C	Dulha Dev	दूल्हा देव
D	All of these are correct	ये सभी
Correct Answer	**D**	

Q.No: 50	Where is the Fair of Mahamritunjay of M.P is held ?	मध्यप्रदेश में महामृत्युंजय का मेला कहाँ लगता है ?
A	Rewa	रीवा
B	Ujjain	उज्जैन
C	Omkareshwar	ओंकारेश्वर
D	Pachmarhi	पचमढ़ी
Correct Answer	**A**	

Q.No: 51	**Read the following passage carefully and answer the questions given below them in context of the passage. Certain words/phrases in the passage are printed in bold fonts to help you to locate them while answering same of the questions.** **The incidents that parents retell about their child's early speech usually involve examples of the strange use of words .Having been warned that the flies bring germs into the house, one child was asked what 'germs' were and the answer was "some toy the flies play with ", It is not always possible to attach so precisely the meaning that children give to the words they use. It seems that during the early childhood many children use their limited vocabulary to refer to a large number of unrelated objects. One child first used 'bow-vow' to refer to a dog and then to a fur piece with glass eyes .Other children often relate 'bow -vow' to cows or horses.** **This process is called overextension .The most common process is to over extend the meaning of a word on the basis of understanding of size ,shape**

	and sound ,Next come movement and texture ,Thus the word 'ball 'extends to all kind of round objects, including a doorknob and the moon or a 'tick - tock' many initially mean a watch but can also be used for the car -horn .This overextension is then followed by narrowing down each term as the word is learnt .for example a child may mean 'ball' for each round object like tomato, apple or a ball but has no confusion in picking out the apple when asked to. The child learn through antonyms much later .By the age of five years the child has completed the greater part of the basic language acquisition process. The passage is mainly about :-
A	**The process of developing meaning**
B	**The art of language**
C	**Adult learning versus adolescent process**
D	**None of these are correct**
Correct Answer	**A**

Q.No: 52	**Read the following passage carefully and answer the questions given below them in context of the passage certain words/phrases in the passage are printed in bold fonts to help you to locate them while answering same of the questions. The incidents that parents retell about their child's early speech usually involve examples of the strange use of words .Having been warned that the flies bring germs into the house, one child was asked what 'germs' were and the answer was "some toy the flies play with ", It is not always possible to attach so precisely the meaning that children give to the words they use. It seems that during the early childhood many children use their limited vocabulary to refer to a large number of unrelated objects. One child first used 'bow-vow' to refer to a dog and then to a fur piece with glass eyes .Other children often relate 'bow -vow' to cows or horses. This process is called overextension .The most common process is to over extend the meaning of a word on the basis of understanding of size ,shape and sound ,Next come movement and texture ,Thus the word 'ball 'extends to all kind of round objects, including a doorknob and the moon or a 'tick - tock' many initially mean a watch but can also be used for the car -horn .This overextension is then followed by narrowing down each term as the word is learnt .for example a child may mean 'ball' for each round object like tomato, apple or a ball but has no confusion in picking out the apple when asked to. The child learn through antonyms much later .By the age of five years the child has completed the greater part of the basic language acquisition process. A child uses expression like 'bow vow' to**
A	**Relate meaning with object**
B	**Relate meaning with size**
C	**Relate meaning with sound**
D	**Relate meaning with colour**
Correct Answer	**C**

Q.No: 53	**Read the following passage carefully and answer the questions given below them in context of the passage certain words/phrases in the**

	passage are printed in bold fonts to help you to locate them while answering same of the questions. **The incidents that parents retell about their child's early speech usually involve examples of the strange use of words .Having been warned that the flies bring germs into the house, one child was asked what 'germs' were and the answer was "some toy the flies play with ", It is not always possible to attach so precisely the meaning that children give to the words they use. It seems that during the early childhood many children use their limited vocabulary to refer to a large number of unrelated objects. One child first used 'bow-vow' to refer to a dog and then to a fur piece with glass eyes .Other children often relate 'bow -vow' to cows or horses.** **This process is called overextension .The most common process is to over extend the meaning of a word on the basis of understanding of size ,shape and sound ,Next come movement and texture ,Thus the word 'ball 'extends to all kind of round objects, including a doorknob and the moon or a 'tick - tock' many initially mean a watch but can also be used for the car -horn .This overextension is then followed by narrowing down each term as the word is learnt .for example a child may mean 'ball' for each round object like tomato, apple or a ball but has no confusion in picking out the apple when asked to.** **The child learn through antonyms much later .By the age of five years the child has completed the greater part of the basic language acquisition process.** **'Over-extension' means**
A	**Not understanding**
B	**Bring additional meaning**
C	**Rejecting the word**
D	**Maintaining silence**
Correct Answer	**B**

Q.No: 54	**Read the following passage carefully and answer the questions given below them in context of the passage certain words/phrases in the passage are printed in bold fonts to help you to locate them while answering same of the questions.** **The incidents that parents retell about their child's early speech usually involve examples of the strange use of words .Having been warned that the flies bring germs into the house, one child was asked what 'germs' were and the answer was "some toy the flies play with ", It is not always possible to attach so precisely the meaning that children give to the words they use. It seems that during the early childhood many children use their limited vocabulary to refer to a large number of unrelated objects. One child first used 'bow-vow' to refer to a dog and then to a fur piece with glass eyes .Other children often relate 'bow -vow' to cows or horses.** **This process is called overextension .The most common process is to over extend the meaning of a word on the basis of understanding of size ,shape and sound ,Next come movement and texture ,Thus the word 'ball 'extends to all kind of round objects, including a doorknob and the moon or a 'tick - tock' many initially mean a watch but can also be used for the car -horn .This overextension is then followed by narrowing down each term as the word is learnt .for example a child may mean 'ball' for each round object like tomato, apple or a ball but has no confusion in picking out the apple when asked to.** **The child learn through antonyms much later .By the age of five years the child has completed the greater part of the basic language acquisition process.** **'Precisely' in the text means :**

A	**Perhaps**
B	**unmatched**
C	**somewhat**
D	**exactly**
Correct Answer	**D**

Q.No: 55	**Read the following passage carefully and answer the questions given below them in context of the passage certain words/phrases in the passage are printed in bold fonts to help you to locate them while answering same of the questions.** **The incidents that parents retell about their child's early speech usually involve examples of the strange use of words .Having been warned that the flies bring germs into the house, one child was asked what 'germs' were and the answer was "some toy the flies play with ", It is not always possible to attach so precisely the meaning that children give to the words they use. It seems that during the early childhood many children use their limited vocabulary to refer to a large number of unrelated objects. One child first used 'bow-vow' to refer to a dog and then to a fur piece with glass eyes .Other children often relate 'bow -vow' to cows or horses.** **This process is called overextension .The most common process is to over extend the meaning of a word on the basis of understanding of size ,shape and sound ,Next come movement and texture ,Thus the word 'ball 'extends to all kind of round objects, including a doorknob and the moon or a 'tick -tock' many initially mean a watch but can also be used for the car -horn .This overextension is then followed by narrowing down each term as the word is learnt .for example a child may mean 'ball' for each round object like tomato, apple or a ball but has no confusion in picking out the apple when asked to.** **The child learn through antonyms much later .By the age of five years the child has completed the greater part of the basic language acquisition process.** **Why does a child use strange words?**
A	**To learn language and it's process**
B	**The parents don't teach the child**
C	**The child lives alone**
D	**The child can't hear the correct sound**
Correct Answer	**A**

Q.No: 56	**Read the following passage carefully and answer the questions given below them in context of the passage certain words/phrases in the passage are printed in bold fonts to help you to locate them while answering same of the questions.** **The incidents that parents retell about their child's early speech usually involve examples of the strange use of words .Having been warned that the flies bring germs into the house, one child was asked what 'germs' were and the answer was "some toy the flies play with ", It is not always possible to attach so precisely the meaning that children give to the words they use. It seems that during the early childhood many children use their limited vocabulary to refer to a large number of unrelated objects. One child first used 'bow-vow' to refer to a dog and then to a fur piece with glass eyes .Other children often relate 'bow -vow' to cows or horses.** **This process is called overextension .The most common process is to over extend the meaning of a word on the basis of understanding of size ,shape**

	and sound ,Next come movement and texture ,Thus the word 'ball 'extends to all kind of round objects, including a doorknob and the moon or a 'tick -tock' many initially mean a watch but can also be used for the car -horn .This overextension is then followed by narrowing down each term as the word is learnt .for example a child may mean 'ball' for each round object like tomato, apple or a ball but has no confusion in picking out the apple when asked to. **The child learn through antonyms much later .By the age of five years the child has completed the greater part of the basic language acquisition process.** **Size and sound relate to :**
A	**Eyes and nose**
B	**Eyes and taste**
C	**Eyes and ears**
D	**Ears and nose**
Correct Answer	**C**

Q.No: 57	**Read the following passage carefully and answer the questions given below them in context of the passage certain words/phrases in the passage are printed in bold fonts to help you to locate them while answering same of the questions.** **The incidents that parents retell about their child's early speech usually involve examples of the strange use of words .Having been warned that the flies bring germs into the house, one child was asked what 'germs' were and the answer was "some toy the flies play with ", It is not always possible to attach so precisely the meaning that children give to the words they use. It seems that during the early childhood many children use their limited vocabulary to refer to a large number of unrelated objects. One child first used 'bow-vow' to refer to a dog and then to a fur piece with glass eyes .Other children often relate 'bow -vow' to cows or horses.** **This process is called overextension .The most common process is to over extend the meaning of a word on the basis of understanding of size ,shape and sound ,Next come movement and texture ,Thus the word 'ball 'extends to all kind of round objects, including a doorknob and the moon or a 'tick -tock' many initially mean a watch but can also be used for the car -horn .This overextension is then followed by narrowing down each term as the word is learnt .for example a child may mean 'ball' for each round object like tomato, apple or a ball but has no confusion in picking out the apple when asked to.** **The child learn through antonyms much later .By the age of five years the child has completed the greater part of the basic language acquisition process.** **Moon here is used as**
A	**Round object**
B	**A satellite**
C	**A toy**
D	**Celestial body**
Correct Answer	**A**

Q.No: 58	**Read the following passage carefully and answer the questions given below them in context of the passage certain words/phrases in the**

	passage are printed in bold fonts to help you to locate them while answering same of the questions. **The incidents that parents retell about their child's early speech usually involve examples of the strange use of words .Having been warned that the flies bring germs into the house, one child was asked what 'germs' were and the answer was "some toy the flies play with ", It is not always possible to attach so precisely the meaning that children give to the words they use. It seems that during the early childhood many children use their limited vocabulary to refer to a large number of unrelated objects. One child first used 'bow-vow' to refer to a dog and then to a fur piece with glass eyes .Other children often relate 'bow -vow' to cows or horses.** **This process is called overextension .The most common process is to over extend the meaning of a word on the basis of understanding of size ,shape and sound ,Next come movement and texture ,Thus the word 'ball 'extends to all kind of round objects, including a doorknob and the moon or a 'tick -tock' many initially mean a watch but can also be used for the car -horn .This overextension is then followed by narrowing down each term as the word is learnt .for example a child may mean 'ball' for each round object like tomato, apple or a ball but has no confusion in picking out the apple when asked to.** **The child learn through antonyms much later .By the age of five years the child has completed the greater part of the basic language acquisition process.** **What happens by the age of five to the child?**
A	**He loses memory of the past**
B	**Completes acquiring basic knowledge of language**
C	**Starts quarreling**
D	**Can't still identify objects**
Correct Answer	**B**

Q.No: 59	**Note: - To make each sentence correct change the forms of the underlined word.** **I'm afraid tonight's performance is <u>cancellation</u>.**
A	**Cancel**
B	**cancelled**
C	**cancelling**
D	**No change**
Correct Answer	**B**

Q.No: 60	**Note: - To make each sentence correct change the forms of the underlined word.** **Contractor was told to use <u>strongful</u> material for the bridge**
A	**Strengthen**
B	**Strongly**
C	**Strong**
D	**Strongs**

Correct Answer	**C**

Q.No: 61	**Note: - To make each sentence correct change the forms of the underlined word.** **Why some people act 80 <u>child</u>?**
A	**childlike**
B	**childishly**
C	**childish**
D	**children**
Question Deleted	

Q.No: 62	**Note: - To make each sentence correct change the forms of the underlined word.** **<u>Tourist</u> is a major industry in Nepal.**
A	**Tourism**
B	**Tour**
C	**Touring**
D	**No change**
Correct Answer	**A**

Q.No: 63	**Note: - To make each sentence correct change the forms of the underlined word.** **To protect people is the <u>responsible</u> of the government**
A	**response**
B	**responding**
C	**responded**
D	**responsibility**
Correct Answer	**D**

Q.No: 64	**Note: - To make each sentence correct change the forms of the underlined word.** **What can you <u>conclusion</u> from the fact?**
A	**Concluded**
B	**concludingly**
C	**concluding**
D	**conclude**
Correct Answer	**D**

Q.No: 65	**Choose the correct alternative for each indirect speech from the given options** **He said,"God knows. I have committed no sin ",**
A	**He called upon God to cry that he had committed no sin**
B	**He prayed to God that he had committed no sin**
C	**He called upon God to witness that he had committed no sin**
D	**He told God that he had committed no sin**
Question Deleted	

Q.No: 66	**Choose the correct alternative for each indirect speech from the given options** **He said "They will go to Chennai",**
A	**He said that they would go to Chennai**
B	**He confirmed that they will leave to Chennai**
C	**He doubted that they would go to Chennai**
D	**He told that they would have to go to Chennai**
Correct Answer	**A**

Q.No: 67	**Choose the correct alternative for each indirect speech from the given options** **His friends condoled _____ him _____ his bereavement.**
A	**in, with**
B	**with, in**
C	**for, to**
D	**with, on**
Correct Answer	**B**

Q.No: 68	**Select the most appropriate word for the blank from the options:-** **If kirit speaks the truth, he _____.**
A	**will be acquitted**
B	**acquits**
C	**will acquit**
D	**will be acquitting**
Correct Answer	**A**

Q.No: 69	**Select the most appropriate word for the blank from the options:-** **I carry some money in my pocket _____ I loose my purse .**
A	**if**
B	**unless**
C	**when**
D	**in case**
Correct Answer	**C**

Q.No: 70	**Choose the correct conversion of the sentence given below :** **Mumbai is one of the richest towns in India.**
A	**Mumbai is richer than all towns in India**
B	**Very few towns in India are as rich as Mumbai**
C	**No towns in India is as rich as Mumbai**
D	**Mumbai is the richest town in India**
Correct Answer	**B**

Q.No: 71	**Choose the correct conversion of the sentence given below :** **Promises should be kept**
A	**One should keep one's promises.**
B	**You should keep your promises.**
C	**Promises should be remembered.**
D	**Keep your promise.**
Correct Answer	**A**

Q.No: 72	**How many parts of speech in English grammar?**
A	**Six**
B	**Seven**
C	**Eight**
D	**Nine**
Correct Answer	**C**

Q.No: 73	**The passive voice of the sentence "Open the door" is**
A	**The door should be opened**
B	**The door must be opened**
C	**Let the door be opened**

D	**Let it be opened by you**
Correct Answer	**C**

Q.No: 74	**"I am going to Mumbai tomorrow". In this sentence the word 'tomorrow' is**
A	**Noun**
B	**Pronoun**
C	**Verb**
D	**Adverb**
Correct Answer	**D**

Q.No: 75	**Turn the following sentence into Active voice** **"Football is being played by John"** **Choose the correct one from the following alternatives.**
A	**John has played football**
B	**John has been played football**
C	**John is playing football**
D	**John has been playing football**
Correct Answer	**C**

Q.No: 76	**इनमें कौन-सा शब्द जातिवाचक संज्ञा है ?**
A	**गंगा**
B	**मनुष्य**
C	**स्वर्ग**
D	**मण्डल**
Correct Answer	**B**

Q.No: 77	**आप भला, तो जग भला , - में 'आप' कौन -सा सर्वनाम है ?**
A	**संबंधवाचक**
B	**प्रश्नवाचक**
C	**निजवाचक**
D	**निश्चयवाचक**
Correct Answer	**C**

Q.No: 78	**इनमें से कौन-सा उदाहरण विसर्ग संधि का नहीं है ?**

A	चतुष्पाद
B	मनोविज्ञान
C	अधोगति
D	अत्याचार
Correct Answer	**D**

Q.No: 79	'सूखा' का तत्सम रूप है _
A	सुष्क
B	शुष्क
C	सूख
D	सूका
Correct Answer	**B**

Q.No: 80	कौन-सा शब्द प्रशासनिक शब्दावली का है ?
A	सहृदय
B	उत्पल
C	अनभिज्ञ
D	निकाय
Correct Answer	**D**

Q.No: 81	'बिध गया सो मोती रह गया सो सीप' कहावत का अर्थ है _
A	मोती और सीप की माला गूथना ।
B	अच्छा-अच्छा लेना और खराब को छोड़ देना ।
C	जितना काम हो जाए वही ठीक है ।
D	जितना मिल जाए उतने में संतोष ।
Correct Answer	**C**

Q.No: 82	'इहलोक' किस शब्द का विलोम है ?
A	स्वर्गलोक
B	परलोक
C	देवलोक
D	अर्यमालोक

Correct Answer	**B**

Q.No: 83	**'अधुनातन'का पर्यायवाची शब्द है _**
A	**पुरातन**
B	**आधुनिक**
C	**विगत**
D	**प्राचीन**
Correct Answer	**B**

Q.No: 84	**इनमें एक विशेषण नहीं है _**
A	**तांत्रिक**
B	**उपार्जित**
C	**आदरणीय**
D	**उपनिवेश**
Correct Answer	**D**

Q.No: 85	**'सोऽहम्' में कौन-सी संधि है ?**
A	**विसर्ग संधि**
B	**स्वर संधि**
C	**व्यंजन संधि**
D	**इनमें से कोई सही नहीं**
Correct Answer	**A**

Q.No: 86	**'उसकी सौजन्यता से सभी प्रभावित हैं; ' वाक्य में किस प्रकार की अशुद्धि है ?**
A	**कर्ता संबंधी**
B	**क्रिया संबंधी**
C	**संज्ञा संबंधी**
D	**अव्यय संबंधी**
Correct Answer	**C**

Q.No: 87	**'कपटी मित्र' किस मुहावरे का अर्थ है ?**

A	गुदड़ी का लाल
B	आस्तीन का साँप
C	आँखों का तारा
D	गाँठ का पूरा
Correct Answer	**B**

Q.No: 88	इनमें एक शब्द तदभव है _
A	हल्दी
B	क्षीर
C	तिक्त
D	चंचु
Correct Answer	**A**

Q.No: 89	इनमें से एक शब्द का सदा बहुवचन में प्रयोग होता है _
A	हाथ
B	प्राण
C	शिशु
D	घोड़ा
Correct Answer	**B**

Q.No: 90	'एकाएक' में समास है _
A	अव्ययीभाव
B	तत्पुरुष
C	कर्मधारय
D	बहुव्रीहि
Correct Answer	**A**

Q.No: 91	इनमें से एक में कर्मधारय समास है _
A	मुनिवर
B	मनसिज
C	अनजाने
D	पतझड़

Correct Answer	**A**

Q.No: 92	**'दिन के बाद दिन' विग्रह का समस्त पद है _**
A	**प्रतिदिन**
B	**दिनानुदिन**
C	**दिन-दिन**
D	**दिनोंदिन**
Correct Answer	**B**

Q.No: 93	**'रसोईघर' का समास विग्रह है _**
A	**रसोई का घर**
B	**रसोई के लिए घर**
C	**घर की रसोई**
D	**घर में रसोई**
Correct Answer	**B**

Q.No: 94	**'नायक' का सही संधि-विच्छेद है _**
A	**ने + अक**
B	**नय + अक**
C	**नाय + क**
D	**नै + अक**
Correct Answer	**D**

Q.No: 95	**इनमें से एक की वर्तनी शुद्ध है _**
A	**आधीन**
B	**संग्रहीत**
C	**अनधिकृत**
D	**पक्षीगण**
Correct Answer	**C**

Q.No: 96	**इनमें से एक वाक्य अशुद्ध है _**
A	**मैं आपके दर्शन करने आया हूँ ।**

B	वह अपनी बात के स्पष्टीकरण के लिए तैयार है ।
C	अध्यापक ने छात्र से प्रश्न पूछा ।
D	तब यह काम जरूर होगा ।
Correct Answer	**C**

Q.No: 97	इनमें से एक वाक्य शुद्ध है _
A	ऐसा करने पर कोई हानि नहीं है ।
B	आपके हाथ कुछ नहीं आया ।
C	वह अपने बच्चों को प्यार करता है ।
D	मेरे आगे कोई नहीं ठहर सकता ।
Correct Answer	**B**

Q.No: 98	इनमें से कौन-सा शब्द 'विष्णु' का पर्यायवाची है ?
A	नीलकंठ
B	चतुर्मुख
C	गरुड़ध्वज
D	मघवा
Correct Answer	**C**

Q.No: 99	इनमें एक भाववाचक संज्ञा है _
A	स्पष्ट
B	शिष्ट
C	सौंदर्य
D	यथेष्ट
Correct Answer	**C**

Q.No: 100	इनमें से एक संयुक्त वाक्य है _
A	परिश्रम करके सफलता प्राप्त करो ।
B	वह मुझसे कहता है कि मेरे घर आओ ।
C	जब अतिथि विदा हुए तब हम सोने चले गए ।
D	नाव डूब गई पर यात्रियों को बचा लिया गया ।
Correct Answer	**D**

State Engineering Services (Prelims) Exam – 2016

First Paper – Second Shift

(Provisional Model Answer Key)

Q.No: 1	In ancient literature, the name of Sehore district is mentioned as -	प्राचीन ग्रंथों में सीहोर जिले का उल्लेख किस नाम से हुआ है ?
A	Nalpur	नलपुर
B	Durgpur	दुर्गपुर
C	Bhopalpur	भोपालपुर
D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**D**	

Q.No: 2	In M.P. on May 17th 2008, Alirajpur district came into existence. This is of which number district of M.P. -	दिनांक 17 मई 2008 को मध्यप्रदेश में अलीराजपुर जिला अस्तित्व में आया । यह मध्यप्रदेश का किस क्रम का जिला है -
A	48th	48 वाँ
B	49th	49 वाँ
C	50th	50 वाँ
D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**B**	

Q.No: 3	Which of the following is also known as Black soil ?	निम्न में से किसे काली मिट्टी के नाम से जाना जाता है ?
A	Regur	रेगुर
B	Banger	बांगर
C	Khadar	खादर
D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**A**	

Q.No: 4	How many types of seasons are found in M.P. ?	मध्यप्रदेश में कितने प्रकार की ऋतुएँ पायी जाती हैं ?
A	Four	चार
B	Three	तीन
C	Two	दो
D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**B**	

Q.No: 5	Which river of M.P is Known as "Rewa"?	मध्यप्रदेश में ''रेवा'' नाम से किस नदी को जाना जाता है ?
A	Tapti	ताप्ती
B	Chambal	चम्बल
C	Kshipra	क्षिप्रा
D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**D**	

Q.No: 6	Which of the following is not a tributary of river Son?	निम्न में से कौन, सोन नदी की सहायक नदी नहीं है ?
A	Johila	जोहिला
B	Banas	बनास
C	Gopad	गोपद
D	jamini	जामिनी
Correct Answer	**D**	

Q.No: 7	Benefitted districts from Mahi project are	माही परियोजना से लाभान्वित जिले हैं -
A	Alirajpur - Jhabua	अलीराजपुर-झाबुआ
B	Dhar - Jhabua	धार-झाबुआ
C	Ratlam - Jhabua	रतलाम -झाबुआ
D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**B**	

Q.No: 8	At present tropic of cancer passes through how many districts of M.P ?	वर्तमान में कर्क रेखा मध्यप्रदेश के कितने जिलों से गुजरती है ?
A	12	12
B	10	10
C	14	14
D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**C**	

Q.No: 9	The farthest district from bhopal is	भोपाल से दूरस्थ जिला है -
A	Singroli	सिंगरोली
B	Alirajpur	अलीराजपुर
C	Balaghat	बालाघाट
D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**A**	

Q.No: 10	Highest irrigated districts of M.P are -	मध्यप्रदेश में सर्वाधिक सिंचित जिले हैं -
A	Datia, Gwalior, Sheopur, Hoshangabad, Morena	दतिया, ग्वालियर, श्योपुर, होशंगाबाद, मुरैना
B	Datia, Gwalior, Sheopur, Dindori, Morena	दतिया, ग्वालियर, श्योपुर, डिण्डोरी, मुरैना
C	Datia, Gwalior, Sheopur, Mandla, Morena	दतिया, ग्वालियर, श्योपुर, मण्डला, मुरैना
D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**A**	

Q.No: 11	According to 2011 census, density of population in Madhya Pradesh is ___	सन् 2011 की जनगणनानुसार मध्यप्रदेश में जनसंख्या घनत्व है-
A	288	288
B	236	236
C	336	336
D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**B**	

Q.No: 12	According to 2011 census, which one of the following district has the minimum population of 0-6 age group?	जनगणना 2011 के अनुसार 0 से 6 वर्ष आयु समूह की सबसे कम जनसंख्या निम्न में से किस जिले की है ?
A	Datia	दतिया
B	Anooppur	अनूपपुर
C	Umaria	उमरिया
D	Dindori	डिंडोरी
Correct Answer	**C**	

Q.No: 13	According to 2011 census, the correct sequence of the districts in decreasing order of population density in M.P is	जनगणना-2011 अनुसार मध्यप्रदेश में जनघनत्व के घटते क्रम में जिलों का सही क्रम है -
A	Bhopal, Indore, Jabalpur, Gwalior	भोपाल, इन्दौर, जबलपुर, ग्वालियर
B	Indore, Bhopal, Jabalpur, Gwalior	इन्दौर, भोपाल, जबलपुर, ग्वालियर
C	Bhopal, Jabalpur, Indore, Gwalior	भोपाल, जबलपुर, इन्दौर, ग्वालियर
D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**A**	

Q.No: 14	The correct sequence of districts in increasing order of area is	क्षेत्रफल के बढ़ते क्रम में जिलों का सही क्रम है -
A	Datia, Bhopal, Alirajpur, Harda	दतिया, भोपाल, अलीराजपुर, हरदा
B	Harda, Datia, Bhopal, Alirajpur	हरदा, दतिया, भोपाल, अलीराजपुर
C	Alirajpur, Harda, Datia, Bhopal	अलीराजपुर, हरदा, दतिया, भोपाल
D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**A**	

Q.No: 15	Who among the following being the governor of M.P ?	निम्नलिखित में से कौन मध्यप्रदेश के राज्यपाल रहे हैं ?
A	Shri Shankardayal Sharma	श्री शंकरदयाल शर्मा
B	Shri Raja Naresh Chandra Singh	श्री राजा नरेशचन्द्र सिंह
C	Shri Dwarika Prasad Mishra	श्री द्वारिकाप्रसाद मिश्र

D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**D**	

Q.No: 16	How many times President's rule imposed in M.P?	मध्यप्रदेश में कितनी बार राष्ट्रपति शासन लगाया गया है ?
A	Four times	चार बार
B	Two times	दो बार
C	Three times	तीन बार
D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**C**	

Q.No: 17	Who was the first Lokayukta of M.P?	मध्यप्रदेश के प्रथम लोकायुक्त कौन थे ?
A	Shri Kashiprasad Pandey	श्री काशीप्रसाद पाण्डेय
B	Shri Ramprakash Gupta	श्री रामप्रकाश गुप्त
C	Shri P.V Dixit	श्री पी.वी. दीक्षित
D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**C**	

Q.No: 18	Terminal districts of Madhya Pradesh state are	मध्यप्रदेश राज्य के सीमांत जिले हैं -
A	East - Singroli, West - Alirajpur, North - Morena, South - Burhanpur	पूर्वी-सिंगरोली, पश्चिमी-अलीराजपुर, उत्तरी-मुरैना, दक्षिणी-बुरहानपुर
B	East - Anuppur, West - Alirajpur, North - Bhind, South - Balaghat	पूर्वी-अनूपपुर , पश्चिमी-अलीराजपुर,उत्तरी-भिण्ड, दक्षिणी-बालाघाट
C	East - Singroli, West - Alirajpur, North - Bhind, South - Bunhanpur	पूर्वी-सिंगरोली, पश्चिमी-अलीराजपुर , उत्तरी - भिण्ड , दक्षिणी-बुरहानपुर
D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**A**	

Q.No: 19	Which of the following is known as "Minto Hall"?	''मिण्टो हॉल '' के नाम से निम्न में से कौन जाना जाता है ?
A	Present state Legislative Assembly House	राज्य विधानसभा का वर्तमान भवन

B	Old state Legislative Assembly House	पुराना विधानसभा भवन
C	Gwalior Fort	ग्वालियर का किला
D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**B**	

Q.No: 20	High court branches of M.P are at	मध्यप्रदेश उच्च न्यायालय की खण्डपीठ हैं -
A	Indore, Bhopal	इन्दौर, भोपाल
B	Gwalior, Bhopal	ग्वालियर , भोपाल
C	Indore, Gwalior	इन्दौर , ग्वालियर
D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**C**	

Q.No: 21	Where is industrial court of M.P is situated?	मध्यप्रदेश का औद्योगिक न्यायालय कहाँ स्थित है ?
A	Indore	इन्दौर
B	Bhopal	भोपाल
C	Jabalpur	जबलपुर
D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**A**	

Q.No: 22	In which district Ustad Allauddin Khan Music and Art Academy is situated?	उस्ताद अलाउद्दीन खाँ संगीत एवं कला अकादमी किस जिले में स्थित है ?
A	Gwalior	ग्वालियर
B	Satna	सतना
C	Bhopal	भोपाल
D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**C**	

Q.No: 23	Fertilizer work shop , Guna is established with the collaboration of which countries ?	गुना स्थित फर्टिलाइजर कारखाना किन देशों के सहयोग से स्थापित किया गया है ?
A	America and Russia	अमेरिका एवं रुस

B	America and Italy	अमेरिका एवं इटली
C	Italy and France	इटली एवं फ्रांस
D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**B**	

Q.No: 24	First woman appointed as Governer of M.P is	मध्यप्रदेश में प्रथम महिला राज्यपाल नियुक्त हुई -
A	Nirmala Buch	निर्मला बुच
B	Sarojini Naidu	सरोजिनी नायडू
C	Sarojini Saxena	सरोजिनी सक्सेना
D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**D**	

Q.No: 25	The M.P state Planning Commission was constituted on -	मध्यप्रदेश राज्य योजना मण्डल का गठन किया गया था -
A	24th October 1956	24 अक्टूबर 1956
B	24th October 1962	24 अक्टूबर 1962
C	24th October 1972	24 अक्टूबर 1972
D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**C**	

Q.No: 26	Where is National Research Centre for Soyabean(N.R.C.S) of M.P situated -	मध्यप्रदेश में राष्ट्रीय सोयाबीन अनुसंधान केन्द्र (एन.आर.सी.एस.) कहाँ स्थित है ?
A	Ujjain	उज्जैन
B	Bhopal	भोपाल
C	Jabalpur	जबलपुर
D	Indore	इन्दौर
Correct Answer	**D**	

Q.No: 27	Which of the following is hydroelectric power generation station of other state	निम्न में से कौन अन्य राज्य में स्थित जल विद्युत गृह है ?

A	Bansagar	बाणसागर
B	Pench	पेंच
C	Jawaharsagar	जवाहरसागर
D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**C**	

Q.No: 28	"The M.P state Mining Corporation" of government of M.P is established in -	मध्यप्रदेश शासन द्वारा ''दि एम.पी. स्टेट माइनिंग कार्पोरेशन '' की स्थापना की गयी -
A	1956	1956
B	1967	1967
C	1962	1962
D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**C**	

Q.No: 29	In which district of M.P Graphite is found	मध्यप्रदेश में ग्रेफाइट किस जिले में पाया जाता है ?
A	Betul	बैतूल
B	Jhabua	झाबुआ
C	Dhar	धार
D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**A**	

Q.No: 30	On the basis of area, the biggest and the smallest National Parks are -	क्षेत्रफल की दृष्टि से सबसे बड़ा व सबसे छोटा राष्ट्रीय उद्यान है -
A	Panna and Satpuda	पन्ना व सतपुड़ा
B	Kanhakisli and Pench	कान्हा किसली व पेंच
C	Kanhakisli and Jiwashma(Fossils) (Dindori)	कान्हा किसली व जीवाष्म (डिंडोरी)
D	Kanhakisli and Sanjay (Sidhi)	कान्हा किसली व संजय (सीधी)
Correct Answer	**C**	

Q.No: 31	According to census 2011, the 5 districts of smallest sex ratio of M.P	जनगणना-2011 के अनुसार मध्यप्रदेश में

	are -	सबसे कम लिंगानुपात वाले पाँच जिले हैं-
A	Bhind, Morena, Gwalior, Datia and Shivpuri	भिण्ड, मुरैना , ग्वालियर, दतिया और शिवपुरी
B	Bhind, Morena, Gwalior, Datia and Jhabua	भिण्ड, मुरैना , ग्वालियर, दतिया और झाबुआ
C	Bhind, Morena, Gwalior, Datia and Guna	भिण्ड, मुरैना , ग्वालियर, दतिया और गुना
D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**A**	

Q.No: 32	When state Election Commission is constituted in M.P ?	मध्यप्रदेश में राज्य निर्वाचन आयोग का गठन कब किया गया ?
A	19 January 1994	19 जनवरी 1994
B	29 January 1994	29 जनवरी 1994
C	21 January 1994	21 जनवरी 1994
D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**D**	

Q.No: 33	Provision of Minimum and Maximum number of District Panchayat member election fields in a district are	जिले में जिला पंचायत सदस्य निर्वाचन क्षेत्रों की न्यूनतम व अधिकतम संख्या निर्धारित की गयी है -
A	10, 25	10, 25
B	10, 20	10, 20
C	10, 35	10, 35
D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**C**	

Q.No: 34	When Micro, Small and Medium Industrial Act become effective in M.P ?	मध्यप्रदेश में सूक्ष्म, लघु एवं मध्यम उद्योग विकास अधिनियम कब से प्रभावशील हुआ ?
A	2nd October 2006	2 अक्टूबर 2006
B	15th August 2006	15 अगस्त 2006
C	26th January 2006	26 जनवरी 2006
D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**A**	

Q.No: 35	Which is the first factory for cement production in M.P?	मध्यप्रदेश में सीमेण्ट उत्पादन की प्रथम फैक्ट्री कौन सी है ?
A	Camore Cement Factory	कैमोर सीमेण्ट फैक्ट्री
B	Banmour Factory (Morena)	बानमौर फैक्ट्री (मुरैना)
C	Satna Cement Works	सतना सीमेण्ट वर्क्स
D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**B**	

Q.No: 36	With the help of which country optical fiber factory of Mandideep is established ?	मण्डीदीप में आप्टिकल फाइवर कारखाना किस देश के सहयोग से बनाया गया ?
A	USA	संयुक्त राज्य अमेरिका
B	Japan	जापान
C	France	फ्रांस
D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**B**	

Q.No: 37	Security Paper mill, Hoshangabad established in year -	सिक्योरिटी पेपर मिल, होशंगाबाद का स्थापना वर्ष है-
A	1975-76	1975-76
B	1963-64	1963-64
C	1967-68	1967-68
D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**C**	

Q.No: 38	Which of the following Plan is/are for women ?	निम्नलिखित में से कौन-सी योजना महिलाओं के लिए हैं /है ?
A	Dwakara Plan	ड्वाकरा योजना
B	Gramya Plan	ग्राम्या योजना
C	Women Empowerment Plan	महिला समृध्दि योजना
D	All are correct	सभी सही
Correct Answer	**D**	

Q.No: 39	When Chief Minister Annapurna Yojana is started in M.P. ?	मध्यप्रदेश में मुख्यमंत्री अन्नपूर्णा योजना कब प्रारंभ की गयी ?
A	January 2013	जनवरी-2013
B	February 2014	फरवरी-2014
C	April 2008	अप्रेल-2008
D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**C**	

Q.No: 40	Kumar Gandharv National honour is given for -	कुमार गंधर्व राष्ट्रीय सम्मान दिया जाता है -
A	Classical Music	शास्त्रीय संगीत
B	Hindustani Dance	हिन्दुस्तानी नृत्य
C	Karnataka Dance	कर्नाटक नृत्य
D	All are correct	सभी सही
Correct Answer	**A**	

Q.No: 41	The amount given in Tansen National Samman is	तानसेन राष्ट्रीय सम्मान में दी जाने वाली राशि है -
A	1.5 Lakh	1.5 लाख
B	2.00 Lakh	2.00 लाख
C	2.5 Lakh	2.5 लाख
D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**B**	

Q.No: 42	The head quarter of Central M.P Gramin Bank is at -	सेण्ट्रल मध्यप्रदेश ग्रामीण बैंक का मुख्यालय है -
A	Bhopal	भोपाल
B	Chhindwara	छिन्दवाड़ा
C	Sagar	सागर
D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**B**	

Q.No: 43	"Direct cash transfer scheme" in January 2013 started in which districts of M.P ?	जनवरी 2013 में ''डाइरेक्ट कैश ट्रांसफर स्कीम '' मध्यप्रदेश के किन जिलों में प्रारंभ की गयी ?
A	Khandwa, Hoshangabad, Harda	खण्डवा, होशंगाबाद व हरदा
B	Indore, Ujjain, Bhopal	इन्दौर , उज्जैन व भोपाल
C	Khandwa, Khangore, Hoshangabad	खण्डवा, खरगोन व होशंगाबाद
D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**A**	

Q.No: 44	With which game Shourabh Sharma (Dhar)is related	सौरभ शर्मा (धार) का सम्बन्ध किस खेल से है ?
A	Cricket	क्रिकेट
B	Tennis	टेनिस
C	Badminton	बैडमिंटन
D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**C**	

Q.No: 45	The scheduled tribe has maximum population in M.P is	मध्यप्रदेश में सर्वाधिक जनसंख्या वाली जनजाति है -
A	Gond	गोंड
B	Meena	मीना
C	Bhil	भील
D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**A**	

Q.No: 46	When M.P state Forest Development Corporation is constituted :-	मध्यप्रदेश राज्य वन-विकास निगम का गठन कब किया गया था ?
A	1975	1975
B	1976	1976
C	1980	1980
D	1982	1982
Correct Answer	**A**	

Q.No: 47	In which district of M.P Panpur Sanctuary is situated?	पानपुर अभयारण्य मध्यप्रदेश के किस जिले में स्थित है ?
A	Shivpuri	शिवपुरी
B	Morena	मुरैना
C	Gwalior	ग्वालियर
D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**B**	

Q.No: 48	How many National highways passes through Madhya Pradesh	मध्यप्रदेश से होकर गुजरने वाले राष्ट्रीय राजमार्गों की कुल संख्या है -
A	17	17
B	18	18
C	16	16
D	None of these are correct	इनमें से कोई सही नहीं
Correct Answer	**D**	

Q.No: 49	Where is Indira Gandhi National Human Museum located?	इन्दिरा गाँधी राष्ट्रीय मानव संग्रहालय कहाँ स्थित है ?
A	Bhopal	भोपाल
B	Indore	इन्दौर
C	Gwalior	ग्वालियर
D	Sagar	सागर
Correct Answer	**A**	

Q.No: 50	In which district Malanpur Industrial development centre is situated?	मालनपुर औद्योगिक विकास केन्द्र किस जिले में स्थित है ?
A	Bhind	भिण्ड
B	Datia	दतिया
C	Guna	गुना
D	Gwalior	ग्वालियर
Correct Answer	**A**	

Q.No: 51	**Read the following passage carefully and answer the questions given below them in context of the passage certain words/phrases in the passage are printed in bold fonts to help you to locate them while answering some of the questions.** ***Unseen passage for comprehension*** **This is the era of information explosion in a world that has shrunk to drawing room proportions. In an era of information explosion, everything is as close as you want it to be. The communication revolution has made its effect on the world of sports too. Today the fax machines and computers have made it that if Stefan Edberg suffers a shock at Wimbledon at 1.30 A.M. IST, the news can comfortably make into the morning newspapers in Delhi. Today the media, especially TV and the press bestow special attention on the sportsperson and have turned them in to the best of national heroes and international celebrities. There were days when top players walked out of tournament sites to neighborhood markets and walk unnoticed for a window shopping after the matches. The times have changed now. Today Ramesh Krishnans, Kapil Devs and Ashwini Nachappas can't afford such privileges as they would be mobbed at every turn, whether it is New Delhi, Lords or Beijing. Inevitably, the information boom triggered by the media obsession with sports persons has been both a blessing and a curse for the superstars of sport. While on one hand the media focus has made them more marketable, and therefore, considerably richer - with all the endorsements and the lucrative contracts - than they would have been otherwise, the constant glare has also put enormous pressures on the best of them. Tennis fans of '50s or '60s would hardly know the name of Rod Laver's wife. Now any 12 or 13 years old seems to be able to tell the name of Stefan Edberg's girl friend. This is just one example. There are hundreds of such available in the world of sport. In such cases, where the information -if one can call it that -has nothing to do with a players game or even the player can take the media shelter behind the public's right to know? Is that right absolutely? If one's right to swing his arms ends where the others nose begins, then doesn't the right of the media to inform and that of the public to be informed and where the sports person's private life begins? Isn't there a line between journalistic license and licentious journalism in the sports columns? There is of course no attempts at pompous sermonizing here but merely an effort to see if there is a sense of awareness in a section of the sports - press of the responsibilities that go with inalienable freedom to inform.** **The author's objective in writing the passage seems to be :**
A	**Make a comparison of old and new trend in sports journalism**
B	**Highlight the role of media in communication revolution**
C	**Make a case for a balanced flow of information in sports journalism**
D	**Praise the role of media in global coverage of sports events**
Correct Answer	**C**

Q.No: 52	**Read the following passage carefully and answer the questions given below them in context of the passage certain words/phrases in the passage are printed in bold fonts to help you to locate them while answering some of the questions.** ***Unseen passage for comprehension***

	This is the era of information explosion in a world that has shrunk to drawing room proportions. In an era of information explosion, everything is as close as you want it to be. The communication revolution has made its effect on the world of sports too. Today the fax machines and computers have made it that if Stefan Edberg suffers a shock at Wimbledon at 1.30 A.M. IST, the news can comfortably make into the morning newspapers in Delhi. Today the media, especially TV and the press bestow special attention on the sportsperson and have turned them in to the best of national heroes and international celebrities. There were days when top players walked out of tournament sites to neighborhood markets and walk unnoticed for a window shopping after the matches. The times have changed now. Today Ramesh Krishnans, Kapil Devs and Ashwini Nachappas can't afford such privileges as they would be mobbed at every turn, whether it is New Delhi, Lords or Beijing. Inevitably, the information boom triggered by the media obsession with sports persons has been both a blessing and a curse for the superstars of sport. While on one hand the media focus has made them more marketable, and therefore, considerably richer - with all the endorsements and the lucrative contracts - than they would have been otherwise, the constant glare has also put enormous pressures on the best of them. Tennis fans of '50s or '60s would hardly know the name of Rod Laver's wife. Now any 12 or 13 years old seems to be able to tell the name of Stefan Edberg's girl friend. This is just one example. There are hundreds of such available in the world of sport. In such cases, where the information -if one can call it that -has nothing to do with a players game or even the player can take the media shelter behind the public's right to know? Is that right absolutely? If one's right to swing his arms ends where the others nose begins, then doesn't the right of the media to inform and that of the public to be informed and where the sports person's private life begins? Isn't there a line between journalistic license and licentious journalism in the sports columns? There is of course no attempts at pompous sermonizing here but merely an effort to see if there is a sense of awareness in a section of the sports - press of the responsibilities that go with inalienable freedom to inform. **According to the author it is not necessary for journalist to make any comment on the :**
A	**Poor performance of players**
B	**Techniques of sports journalism**
C	**Public's right to have information**
D	**Personal lives of the sports personalities**
Correct Answer	**D**

Q.No: 53	**Read the following passage carefully and answer the questions given below them in context of the passage certain words/phrases in the passage are printed in bold fonts to help you to locate them while answering some of the questions.** ***Unseen passage for comprehension*** **This is the era of information explosion in a world that has shrunk to drawing room proportions. In an era of information explosion, everything is as close as you want it to be. The communication revolution has made its effect on the world of sports too. Today the fax machines and computers have made it that if Stefan Edberg suffers a shock at Wimbledon at 1.30 A.M. IST, the news can comfortably make into the morning newspapers in Delhi. Today the media, especially TV and the**

	press bestow special attention on the sportsperson and have turned them in to the best of national heroes and international celebrities. There were days when top players walked out of tournament sites to neighborhood markets and walk unnoticed for a window shopping after the matches. The times have changed now. Today Ramesh Krishnans, Kapil Devs and Ashwini Nachappas can't afford such privileges as they would be mobbed at every turn, whether it is New Delhi, Lords or Beijing. Inevitably, the information boom triggered by the media obsession with sports persons has been both a blessing and a curse for the superstars of sport. While on one hand the media focus has made them more marketable, and therefore, considerably richer - with all the endorsements and the lucrative contracts - than they would have been otherwise, the constant glare has also put enormous pressures on the best of them. Tennis fans of '50s or '60s would hardly know the name of Rod Laver's wife. Now any 12 or 13 years old seems to be able to tell the name of Stefan Edberg's girl friend. This is just one example. There are hundreds of such available in the world of sport. In such cases, where the information -if one can call it that -has nothing to do with a players game or even the player can take the media shelter behind the public's right to know? Is that right absolutely? If one's right to swing his arms ends where the others nose begins, then doesn't the right of the media to inform and that of the public to be informed and where the sports person's private life begins? Isn't there a line between journalistic license and licentious journalism in the sports columns? There is of course no attempts at pompous sermonizing here but merely an effort to see if there is a sense of awareness in a section of the sports - press of the responsibilities that go with inalienable freedom to inform. **The author's attitude evidently is :**
A	**Idealistic**
B	**Critical**
C	**Cynical**
D	**Orthodox**
Correct Answer	**B**

Q.No: 54	**Read the following passage carefully and answer the questions given below them in context of the passage certain words/phrases in the passage are printed in bold fonts to help you to locate them while answering some of the questions.** ***<u>Unseen passage for comprehension</u>*** **This is the era of information explosion in a world that has shrunk to drawing room proportions. In an era of information explosion, everything is as close as you want it to be. The communication revolution has made its effect on the world of sports too. Today the fax machines and computers have made it that if Stefan Edberg suffers a shock at Wimbledon at 1.30 A.M. IST, the news can comfortably make into the morning newspapers in Delhi. Today the media, especially TV and the press bestow special attention on the sportsperson and have turned them in to the best of national heroes and international celebrities. There were days when top players walked out of tournament sites to neighborhood markets and walk unnoticed for a window shopping after the matches. The times have changed now. Today Ramesh Krishnans, Kapil Devs and Ashwini Nachappas can't afford such privileges as they would be mobbed at every turn, whether it is New Delhi, Lords or Beijing. Inevitably, the information boom triggered by the media obsession with sports persons has been both a blessing and a curse for the superstars of sport. While on**

	one hand the media focus has made them more marketable, and therefore, considerably richer - with all the endorsements and the lucrative contracts - than they would have been otherwise, the constant glare has also put enormous pressures on the best of them. Tennis fans of '50s or '60s would hardly know the name of Rod Laver's wife. Now any 12 or 13 years old seems to be able to tell the name of Stefan Edberg's girl friend. This is just one example. There are hundreds of such available in the world of sport. In such cases, where the information -if one can call it that -has nothing to do with a players game or even the player can take the media shelter behind the public's right to know? Is that right absolutely? If one's right to swing his arms ends where the others nose begins, then doesn't the right of the media to inform and that of the public to be informed and where the sports person's private life begins? Isn't there a line between journalistic license and licentious journalism in the sports columns? There is of course no attempts at pompous sermonizing here but merely an effort to see if there is a sense of awareness in a section of the sports - press of the responsibilities that go with inalienable freedom to inform. **Which of the following according to the passage is not an outcome of information boom?**
A	**Players are earning more money these days**
B	**Sports persons are now being treated as celebrities**
C	**Quick and fast communication of sports news**
D	**Performance,whether better or worse of the player**
Correct Answer	**D**

Q.No: 55	**Read the following passage carefully and answer the questions given below them in context of the passage certain words/phrases in the passage are printed in bold fonts to help you to locate them while answering some of the questions.** ***<u>Unseen passage for comprehension</u>*** **This is the era of information explosion in a world that has shrunk to drawing room proportions. In an era of information explosion, everything is as close as you want it to be. The communication revolution has made its effect on the world of sports too. Today the fax machines and computers have made it that if Stefan Edberg suffers a shock at Wimbledon at 1.30 A.M. IST, the news can comfortably make into the morning newspapers in Delhi. Today the media, especially TV and the press bestow special attention on the sportsperson and have turned them in to the best of national heroes and international celebrities. There were days when top players walked out of tournament sites to neighborhood markets and walk unnoticed for a window shopping after the matches. The times have changed now. Today Ramesh Krishnans, Kapil Devs and Ashwini Nachappas can't afford such privileges as they would be mobbed at every turn, whether it is New Delhi, Lords or Beijing. Inevitably, the information boom triggered by the media obsession with sports persons has been both a blessing and a curse for the superstars of sport. While on one hand the media focus has made them more marketable, and therefore, considerably richer - with all the endorsements and the lucrative contracts - than they would have been otherwise, the constant glare has also put enormous pressures on the best of them. Tennis fans of '50s or '60s would hardly know the name of Rod Laver's wife. Now any 12 or 13 years old seems to be able to tell the name of Stefan Edberg's girl friend. This is just one example. There are hundreds of such available in the world of sport. In such cases, where the information -if one can call it that -has nothing to**

	do with a players game or even the player can take the media shelter behind the public's right to know? Is that right absolutely? If one's right to swing his arms ends where the others nose begins, then doesn't the right of the media to inform and that of the public to be informed and where the sports person's private life begins? Isn't there a line between journalistic license and licentious journalism in the sports columns? There is of course no attempts at pompous sermonizing here but merely an effort to see if there is a sense of awareness in a section of the sports - press of the responsibilities that go with inalienable freedom to inform. **According to the passage, What is actually going on in the world of sports ,in the name of information?**
A	**Misreporting**
B	**Over-reporting**
C	**Reporting of things not related with the performance of the players**
D	**Development of network between players and readers**
Correct Answer	**C**

Q.No: 56	**Read the following passage carefully and answer the questions given below them in context of the passage certain words/phrases in the passage are printed in bold fonts to help you to locate them while answering some of the questions.** ***<u>Unseen passage for comprehension</u>*** **This is the era of information explosion in a world that has shrunk to drawing room proportions. In an era of information explosion, everything is as close as you want it to be. The communication revolution has made its effect on the world of sports too. Today the fax machines and computers have made it that if Stefan Edberg suffers a shock at Wimbledon at 1.30 A.M. IST, the news can comfortably make into the morning newspapers in Delhi. Today the media, especially TV and the press bestow special attention on the sportsperson and have turned them in to the best of national heroes and international celebrities. There were days when top players walked out of tournament sites to neighborhood markets and walk unnoticed for a window shopping after the matches. The times have changed now. Today Ramesh Krishnans, Kapil Devs and Ashwini Nachappas can't afford such privileges as they would be mobbed at every turn, whether it is New Delhi, Lords or Beijing. Inevitably, the information boom triggered by the media obsession with sports persons has been both a blessing and a curse for the superstars of sport. While on one hand the media focus has made them more marketable, and therefore, considerably richer - with all the endorsements and the lucrative contracts - than they would have been otherwise, the constant glare has also put enormous pressures on the best of them. Tennis fans of '50s or '60s would hardly know the name of Rod Laver's wife. Now any 12 or 13 years old seems to be able to tell the name of Stefan Edberg's girl friend. This is just one example. There are hundreds of such available in the world of sport. In such cases, where the information -if one can call it that -has nothing to do with a players game or even the player can take the media shelter behind the public's right to know? Is that right absolutely? If one's right to swing his arms ends where the others nose begins, then doesn't the right of the media to inform and that of the public to be informed and where the sports person's private life begins? Isn't there a line between journalistic license and licentious journalism in the sports columns? There is of course no attempts at pompous sermonizing here but merely an effort to see if there is a sense of awareness in a section of the sports - press of the**

	responsibilities that go with inalienable freedom to inform. **How do media help the sportspersons?**
A	**By using them in commercial advertising**
B	**By informing about their private life to public**
C	**By providing them good contacts**
D	**By giving large coverage to their activities**
Correct Answer	**D**

Q.No: 57	**Read the following passage carefully and answer the questions given below them in context of the passage certain words/phrases in the passage are printed in bold fonts to help you to locate them while answering some of the questions.** ***Unseen passage for comprehension*** **This is the era of information explosion in a world that has shrunk to drawing room proportions. In an era of information explosion, everything is as close as you want it to be. The communication revolution has made its effect on the world of sports too. Today the fax machines and computers have made it that if Stefan Edberg suffers a shock at Wimbledon at 1.30 A.M. IST, the news can comfortably make into the morning newspapers in Delhi. Today the media, especially TV and the press bestow special attention on the sportsperson and have turned them in to the best of national heroes and international celebrities. There were days when top players walked out of tournament sites to neighborhood markets and walk unnoticed for a window shopping after the matches. The times have changed now. Today Ramesh Krishnans, Kapil Devs and Ashwini Nachappas can't afford such privileges as they would be mobbed at every turn, whether it is New Delhi, Lords or Beijing. Inevitably, the information boom triggered by the media obsession with sports persons has been both a blessing and a curse for the superstars of sport. While on one hand the media focus has made them more marketable, and therefore, considerably richer - with all the endorsements and the lucrative contracts - than they would have been otherwise, the constant glare has also put enormous pressures on the best of them. Tennis fans of '50s or '60s would hardly know the name of Rod Laver's wife. Now any 12 or 13 years old seems to be able to tell the name of Stefan Edberg's girl friend. This is just one example. There are hundreds of such available in the world of sport. In such cases, where the information -if one can call it that -has nothing to do with a players game or even the player can take the media shelter behind the public's right to know? Is that right absolutely? If one's right to swing his arms ends where the others nose begins, then doesn't the right of the media to inform and that of the public to be informed and where the sports person's private life begins? Isn't there a line between journalistic license and licentious journalism in the sports columns? There is of course no attempts at pompous sermonizing here but merely an effort to see if there is a sense of awareness in a section of the sports - press of the responsibilities that go with inalienable freedom to inform.** **The players today don't enjoy the same freedom as was enjoyed by the earlier players because :**
A	**They are constrained by the contracts they sign**
B	**Their fans surround them wherever they go**

C	**Computers have made their life miserable**
D	**Today they number of players has increased and nobody cares for them**
Correct Answer	**B**

Q.No: 58	**Read the following passage carefully and answer the questions given below them in context of the passage certain words/phrases in the passage are printed in bold fonts to help you to locate them while answering some of the questions.** ***<u>Unseen passage for comprehension</u>*** **This is the era of information explosion in a world that has shrunk to drawing room proportions. In an era of information explosion, everything is as close as you want it to be. The communication revolution has made its effect on the world of sports too. Today the fax machines and computers have made it that if Stefan Edberg suffers a shock at Wimbledon at 1.30 A.M. IST, the news can comfortably make into the morning newspapers in Delhi. Today the media, especially TV and the press bestow special attention on the sportsperson and have turned them in to the best of national heroes and international celebrities. There were days when top players walked out of tournament sites to neighborhood markets and walk unnoticed for a window shopping after the matches. The times have changed now. Today Ramesh Krishnans, Kapil Devs and Ashwini Nachappas can't afford such privileges as they would be mobbed at every turn, whether it is New Delhi, Lords or Beijing. Inevitably, the information boom triggered by the media obsession with sports persons has been both a blessing and a curse for the superstars of sport. While on one hand the media focus has made them more marketable, and therefore, considerably richer - with all the endorsements and the lucrative contracts - than they would have been otherwise, the constant glare has also put enormous pressures on the best of them. Tennis fans of '50s or '60s would hardly know the name of Rod Laver's wife. Now any 12 or 13 years old seems to be able to tell the name of Stefan Edberg's girl friend. This is just one example. There are hundreds of such available in the world of sport. In such cases, where the information -if one can call it that -has nothing to do with a players game or even the player can take the media shelter behind the public's right to know? Is that right absolutely? If one's right to swing his arms ends where the others nose begins, then doesn't the right of the media to inform and that of the public to be informed and where the sports person's private life begins? Isn't there a line between journalistic license and licentious journalism in the sports columns? There is of course no attempts at pompous sermonizing here but merely an effort to see if there is a sense of awareness in a section of the sports - press of the responsibilities that go with inalienable freedom to inform.** **NOTE:- CHOOSE the word that is most nearby the <u>same</u> in meaning as the word given in bold in the passage.** **CALL**
A	**name**
B	**invite**
C	**shout**
D	**summon**
Correct Answer	**A**

Q.No: 59	**Read the following passage carefully and answer the questions given below them in context of the passage certain words/phrases in the passage are printed in bold fonts to help you to locate them while answering some of the questions.** ***Unseen passage for comprehension*** **This is the era of information explosion in a world that has shrunk to drawing room proportions. In an era of information explosion, everything is as close as you want it to be. The communication revolution has made its effect on the world of sports too. Today the fax machines and computers have made it that if Stefan Edberg suffers a shock at Wimbledon at 1.30 A.M. IST, the news can comfortably make into the morning newspapers in Delhi. Today the media, especially TV and the press bestow special attention on the sportsperson and have turned them in to the best of national heroes and international celebrities. There were days when top players walked out of tournament sites to neighborhood markets and walk unnoticed for a window shopping after the matches. The times have changed now. Today Ramesh Krishnans, Kapil Devs and Ashwini Nachappas can't afford such privileges as they would be mobbed at every turn, whether it is New Delhi, Lords or Beijing. Inevitably, the information boom triggered by the media obsession with sports persons has been both a blessing and a curse for the superstars of sport. While on one hand the media focus has made them more marketable, and therefore, considerably richer - with all the endorsements and the lucrative contracts - than they would have been otherwise, the constant glare has also put enormous pressures on the best of them. Tennis fans of '50s or '60s would hardly know the name of Rod Laver's wife. Now any 12 or 13 years old seems to be able to tell the name of Stefan Edberg's girl friend. This is just one example. There are hundreds of such available in the world of sport. In such cases, where the information -if one can call it that -has nothing to do with a players game or even the player can take the media shelter behind the public's right to know? Is that right absolutely? If one's right to swing his arms ends where the others nose begins, then doesn't the right of the media to inform and that of the public to be informed and where the sports person's private life begins? Isn't there a line between journalistic license and licentious journalism in the sports columns? There is of course no attempts at pompous sermonizing here but merely an effort to see if there is a sense of awareness in a section of the sports - press of the responsibilities that go with inalienable freedom to inform.** **NOTE:- CHOOSE the word that is most nearby the <u>same</u> in meaning as the word given in bold in the passage.** **boom**
A	**blessing**
B	**curse**
C	**explosion**
D	**flow**
Correct Answer	**C**

Q.No: 60	**Read the following passage carefully and answer the questions given below them in context of the passage certain words/phrases in the passage are printed in bold fonts to help you to locate them while**

	answering some of the questions. ***<u>Unseen passage for comprehension</u>*** **This is the era of information explosion in a world that has shrunk to drawing room proportions. In an era of information explosion, everything is as close as you want it to be. The communication revolution has made its effect on the world of sports too. Today the fax machines and computers have made it that if Stefan Edberg suffers a shock at Wimbledon at 1.30 A.M. IST, the news can comfortably make into the morning newspapers in Delhi. Today the media, especially TV and the press bestow special attention on the sportsperson and have turned them in to the best of national heroes and international celebrities. There were days when top players walked out of tournament sites to neighborhood markets and walk unnoticed for a window shopping after the matches. The times have changed now. Today Ramesh Krishnans, Kapil Devs and Ashwini Nachappas can't afford such privileges as they would be mobbed at every turn, whether it is New Delhi, Lords or Beijing. Inevitably, the information boom triggered by the media obsession with sports persons has been both a blessing and a curse for the superstars of sport. While on one hand the media focus has made them more marketable, and therefore, considerably richer - with all the endorsements and the lucrative contracts - than they would have been otherwise, the constant glare has also put enormous pressures on the best of them. Tennis fans of '50s or '60s would hardly know the name of Rod Laver's wife. Now any 12 or 13 years old seems to be able to tell the name of Stefan Edberg's girl friend. This is just one example. There are hundreds of such available in the world of sport. In such cases, where the information -if one can call it that -has nothing to do with a players game or even the player can take the media shelter behind the public's right to know? Is that right absolutely? If one's right to swing his arms ends where the others nose begins, then doesn't the right of the media to inform and that of the public to be informed and where the sports person's private life begins? Isn't there a line between journalistic license and licentious journalism in the sports columns? There is of course no attempts at pompous sermonizing here but merely an effort to see if there is a sense of awareness in a section of the sports - press of the responsibilities that go with inalienable freedom to inform.** **NOTE:- CHOOSE the word that is most nearby the <u>same</u> in meaning as the word given in bold in the passage.** **fan**
A	**wing**
B	**blower**
C	**lover**
D	**admirer**
Correct Answer	**D**

Q.No: 61	**NOTE:- To make each sentence correct change the form of the word which is underlined. Mark the correct option:** **You will need some proof of <u>identified</u> to enter into the premises**
A	**identifying**
B	**identification**
C	**identity**

D	**None of these are correct**
Correct Answer	**B**

Q.No: 62	**NOTE:- To make each sentence correct change the form of the word which is underlined. Mark the correct option:** **I requested the teacher to <u>simple</u> her explanation**
A	**simplification**
B	**simplify**
C	**simplifying**
D	**simplified**
Correct Answer	**B**

Q.No: 63	**NOTE:- To make each sentence correct change the form of the word which is underlined. Mark the correct option:** **Normally no one likes <u>criticised</u>**
A	**criticism**
B	**critic**
C	**criticizing**
D	**critical**
Correct Answer	**A**

Q.No: 64	**NOTE:- To make each sentence correct change the form of the word which is underlined. Mark the correct option:** **Your shoes are not <u>suit</u> for tennis.**
A	**suitable**
B	**suiting**
C	**suited**
D	**suits**
Correct Answer	**A**

Q.No: 65	**NOTE:- One of the four sentences given in the option is wrong. Mark that to write your answer:**
A	**Neither of the men was tall**
B	**The jury was divided in their opinions.**
C	**Much pains has been taken**
D	**The judge found out that he was guilty**

Correct Answer	**B**

Q.No: 66	**NOTE:- One of the four sentences given in the option is wrong. Mark that to write your answer:**
A	**This is one of the best films that has been produced this year**
B	**She is one of the best mothers that have ever lived**
C	**Satish as well Harish and Suresh likes milk**
D	**None of these words are now used**
Question Deleted	

Q.No: 67	**Note:- Choose the correct alternative for each indirect speech from the options given below:-** **He said to me ,''Thank you very much for your kindness''.**
A	**He thanked me very much for my kindness**
B	**He told me that I am very kind and he is thankful to me**
C	**He asked me to be thankful for his kindness**
D	**He informed me that his thanks are for my kindness**
Correct Answer	**A**

Q.No: 68	**Note:- Choose the correct alternative for each indirect speech from the options given below:-** **He said to the board , "Let us adopt this policy ".**
A	**He told board to adopt the policy**
B	**He suggested the board to adopt that policy**
C	**He asked the board if it can adopt the policy**
D	**He asked to please adopt the policy to the board**
Correct Answer	**B**

Q.No: 69	**NOTE:- Fill in the blank with appropriate preposition:** **The ultimate decision rests _____ the board of directors.**
A	**With**
B	**On**
C	**Upon**
D	**To**
Correct Answer	**A**

Q.No: 70	**Note:- Choose the correct conversion of the sentence given below _____** **Self made men are always respected.**
A	**Respect is gained by self made men**
B	**Respectful men rise by their own efforts**
C	**Men who are risen by their own efforts are always respected**
D	**Men on their own are always respected**
Correct Answer	**C**

Q.No: 71	**Note:- Choose the correct option for the proverb given below:** **"Beating about the bushes".**
A	**Taking the birds out from the bushes**
B	**The bushes are being beaten**
C	**Choosing the right bush to beat**
D	**Guessing the right answer blindly**
Correct Answer	**D**

Q.No: 72	**Note:- Select the most appropriate word for the blank from the options:** **It _____ to me that she was incurable**
A	**happened**
B	**occurred**
C	**flashed**
D	**suggested**
Correct Answer	**B**

Q.No: 73	**Note:- Select the most appropriate word for the blank from the options.** **It is not what you say that _____ but what you do**
A	**matches**
B	**implies**
C	**matters**
D	**moves**
Correct Answer	**C**

Q.No: 74	**Note:- Select the most appropriate word for the blank from the options.** **They are refugees in need of _____**
A	**restoration**

B	**rehabilitation**
C	**recapitulation**
D	**renovation**
Correct Answer	**B**

Q.No: 75	**Note:- Select the most appropriate word for the blank from the options.** **I _____ there if I were you**
A	**would go**
B	**will go**
C	**would have seen**
D	**shall go**
Correct Answer	**A**

Q.No: 76	**'पित्रादेश' शब्द में संधि है -**
A	**यण**
B	**गुण**
C	**अयादि**
D	**वृध्दि**
Correct Answer	**A**

Q.No: 77	**इनमें से कौन-सा शब्द जातिवाचक संज्ञा होते हुए भी योगरूढ़ होने से व्यक्तिवाचक संज्ञा है ?**
A	**हिमालय**
B	**पानी**
C	**सरलता**
D	**मित्रता**
Correct Answer	**A**

Q.No: 78	**'कवयित्री' शब्द का पुल्लिंग रूप है -**
A	**कवीय**
B	**कवि**
C	**कवय**
D	**कविय**
Correct Answer	**B**

Q.No: 79	**इनमें से कौन-सा शब्द बहुवचन है ?**
A	**पुत्र**
B	**साधु**
C	**दर्शन**
D	**मंदिर**
Correct Answer	**C**

Q.No: 80	**'जो कमाएगा; वही खाएगा' वाक्य में कौन - सा सर्वनाम है ?**
A	**संबंधवाचक**
B	**निश्चयवाचक**
C	**निजवाचक**
D	**अनिश्चयवाचक**
Correct Answer	**A**

Q.No: 81	**'दुः + जन' की संधि से बनने वाले शब्द का शुद्ध रूप है -**
A	**दुज्जन**
B	**दुर्जन**
C	**दुरजन**
D	**दुश्जन**
Correct Answer	**B**

Q.No: 82	**'हम नवीन भारत के सैनिक हैं ' वाक्य में विशेष्य है -**
A	**सैनिक**
B	**नवीन**
C	**भारत**
D	**हम**
Correct Answer	**C**

Q.No: 83	**'बालिका अपनी कक्षा में शांतिपूर्वक बैठती है ', वाक्य में 'शांतिपूर्वक' शब्द है -**
A	**गुणवाचक विशेषण**

B	**रीतिवाचक विशेषण**
C	**परिमाणवाचक विशेषण**
D	**कालवाचक विशेषण**
Correct Answer	**B**

Q.No: 84	'पंचतत्त्व' शब्द में समास है –
A	द्विगु
B	बहुव्रीहि
C	द्वंद्व
D	तत्पुरुष
Correct Answer	**A**

Q.No: 85	**किस समास में दोनों पद प्रधान होते हैं ?**
A	**अव्ययीभाव समास**
B	द्वंद्व समास
C	द्विगु समास
D	**बहुव्रीहि समास**
Correct Answer	**B**

Q.No: 86	**'देश के प्रत्येक नागरिकों को अपने कर्तव्यों का पालन करना चाहिए' वाक्य में त्रुटि है -**
A	**लिंग संबंधी**
B	**वचन संबंधी**
C	**कारक संबंधी**
D	**पदक्रम संबंधी**
Correct Answer	**B**

Q.No: 87	**'तुलसीदास ने कहा है कि विनाशकाल में मनुष्य की बुद्धि भ्रष्ट हो जाती है ।' यह किस प्रकार का वाक्य है?**
A	**साधारण वाक्य**
B	**मिश्र वाक्य**
C	**संयुक्त वाक्य**

D	सरल वाक्य
Correct Answer	**B**

Q.No: 88	'इस समय आपकी आयु चालीस वर्ष की है' वाक्य का शुद्ध रूप है -
A	इस समय आपकी आयु चालीस वर्ष की है ।
B	इस समय आपकी आयु चालीस वर्ष है ।
C	इस समय आपकी अवस्था चालीस वर्ष की है ।
D	इनमें से कोई सही नहीं
Correct Answer	**C**

Q.No: 89	इनमें से एक शब्द तत्सम है -
A	खंडहर
B	गोधूम
C	केहरि
D	हीरा
Correct Answer	**B**

Q.No: 90	'बनारस' शब्द का तत्सम रूप है -
A	वाराणशी
B	वनारश
C	वाराणसी
D	बारानसी
Correct Answer	**C**

Q.No: 91	निम्नलिखित में एक शुद्ध है -
A	उज्वल
B	उजवल
C	उज्जवल
D	उज्ज्वल
Correct Answer	**D**

Q.No: 92	'अभिज्ञ' शब्द का विलोम है -

A	**भिज्ञ**
B	**सुविज्ञ**
C	**अनभिज्ञ**
D	**सर्वज्ञ**
Correct Answer	**C**

Q.No: 93	**'कृश' शब्द का विलोम है -**
A	**दुर्बल**
B	**क्षीण**
C	**स्थूल**
D	**दुर्लभ**
Correct Answer	**C**

Q.No: 94	**इनमें एक शब्द 'जल' का पर्यायवाची नहीं है -**
A	**नीर**
B	**जातरूप**
C	मेघपुष्प
D	**अम्बु**
Correct Answer	**B**

Q.No: 95	**इनमें एक शब्द तत्सम है -**
A	**पीपल**
B	**पोखर**
C	**पक्वान्न**
D	**पाख**
Correct Answer	**C**

Q.No: 96	**'पक्ष' शब्द क्या है?**
A	तद्भव
B	**तत्सम**
C	**देशज**
D	**संकर**

Correct Answer	**B**

Q.No: 97	**इनमें कौन-सा शब्द प्रशासनिक शब्दावली समूह का है ?**
A	**पर्पट**
B	**स्वर्गीय**
C	**तदर्थ**
D	**चक्रधर**
Correct Answer	**C**

Q.No: 98	**इनमें से एक मिश्र वाक्य है -**
A	**यह सब मेरी अनुपस्थिति में हुआ ।**
B	**वह धनी है पर लोग ऐसा नहीं समझते ।**
C	**वह दण्ड से बचना चाहता था इसलिए भाग गया ।**
D	**आशा है कि वह दो-चार दिन में आ जाएगा ।**
Correct Answer	**D**

Q.No: 99	**किस वाक्य में 'से' अपादान कारक है ?**
A	**मुझे अपनी कमाई से खाना मिलता है ।**
B	**साधुओं की संगति से बुध्दि सुधरती है ।**
C	**नर्मदा अमरकंटक से निकलती है ।**
D	**कान से सुनी बात पर विश्वास नहीं करना चाहिए ।**
Correct Answer	**C**

Q.No: 100	**इनमें से एक शब्द विशेषण है -**
A	**कृपालु**
B	**ऋषि**
C	**योग**
D	**खण्ड**
Correct Answer	**A**

State Engineering (Prelims) Exam – 2016

Second Paper – Second Shift

(Provisional Model Answer Key)

Agricultural Engineering

Q.No: 1	**The firing order of a 4 stroke 4 cylinder S.I.engine is _____ .**
A	**1 2 4 3**
B	**1 3 4 2**
C	**1 4 3 2**
D	**1 2 3 4**
Correct Answer	**B**

Q.No: 2	**In a combine harvester the ratio of reel peripheral speed of forward speed(reel speed index) should normally be in the range of**
A	**1.25 to 1.50**
B	**1.50 to 1.75**
C	**1.75 to 2.0**
D	**None of these are correct**
Correct Answer	**A**

Q.No: 3	**The size of a seed drill is expressed by**
A	**The amount of seed shown per unit time**
B	**Length x Width of the machine**
C	**Area covered per unit time**
D	**The number of furrow openers x Distance between two furrow openers**
Correct Answer	**D**

Q.No: 4	**What is the natural frequency of driver seat suspension?**
A	**0.5 to 2.0 Hz**
B	**2.1 to 4.0 Hz**
C	**4.1 to 6.0 Hz**
D	**6.1 to 10.0 Hz**

Correct Answer	**A**

Q.No: 5	**Calorific value of rice husk is approximately**
A	**3000 Kcal/kg**
B	**5600 Kcal/kg**
C	**7000 Kcal/kg**
D	**11000 Kcal/kg**
Correct Answer	**A**

Q.No: 6	**The moisture content of paddy at the time of milling should be in the range of**
A	**9 to 10%**
B	**11 to 12%**
C	**13 to 14%**
D	**16 to 18%**
Correct Answer	**C**

Q.No: 7	**Moving the center of gravity of a tractor towards its front wheel creates the problem of**
A	**Instability**
B	**Steering**
C	**Over turning**
D	**None of these are correct**
Correct Answer	**B**

Q.No: 8	**In reciprocating type mowers, the knife clip of knife section restricts**
A	**Horizontal displacement of knife**
B	**Side displacement of knife**
C	**Vertical displacement of knife**
D	**Horizontal and side displacement of knife**
Correct Answer	**C**

Q.No: 9	**Recommended peripheral velocity of spike tooth threshing cylinder for wheat crop is**
A	**Less than 20 m/s**
B	**20 to 30 m/s**
C	**31 to 40 m/s**
D	**More than 40 m/s**

Correct Answer	**B**

Q.No: 10	**The difference between the values of initial and equilibrium moisture content of food is known as**
A	**Unbound moisture content**
B	**Bound moisture content**
C	**Free moisture content**
D	**Critical moisture content**
Correct Answer	**C**

Q.No: 11	**Shortening of top link length of a tractor**
A	**Increases weight transfer on rear wheel**
B	**Decreases weight transfer an rear wheel**
C	**Increases penetration of implement**
D	**Decreases penetration of implement**
Correct Answer	**D**

Q.No: 12	**Drying of fruit pulp can be accomplished by a**
A	**Tray dryer**
B	**Fluidized bed dryer**
C	**Drum dryer**
D	**Spray dryer**
Correct Answer	**C**

Q.No: 13	**An animal drawn seed drill has K number of furrow openers at 180mm apart. If the speed of operation is 2.0 Kmph. The area covered (ha) in 8-h day is given by**
A	**1.85/1000 K**
B	**28.8×10^{-2} K**
C	**K/6.56**
D	**1.762 K**
Correct Answer	**B**

Q.No: 14	**The main difference between fly wheel & governor is**
A	**Govenner is heavier than flywheel**
B	**Flywheel is fixed to the crankshaft while govenner is not**
C	**Flywheel store energy & govenner controls engine speed**

D	**None of these are correct**
Correct Answer	**C**

Q.No: 15	**The most used and least efficient power outlet of a tractor is**
A	**Power take off & halt in the front**
B	**Power take off & halt in the rear**
C	**Drawbar in the rear**
D	**None of these are correct**
Correct Answer	**C**

Q.No: 16	**The inflation pressure in front tyres of tractor is**
A	**1.2 - 2.0 kg/cm^2**
B	**2.0 - 2.5 kg/cm^2**
C	**2.5 - 3.0 kg/cm^2**
D	**3.0 - 4.0 kg/cm^2**
Correct Answer	**B**

Q.No: 17	**Unit for measurement of vaccum is**
A	**Kgf/cm^2**
B	**Torr**
C	**BTU**
D	**None of these are correct**
Correct Answer	**A**

Q.No: 18	**Conduction of heat transfer is quantified by**
A	**Fourier's law**
B	**Laplace law**
C	**Bueke-plummer equation**
D	**Black-Kizrey equation**
Correct Answer	**A**

Q.No: 19	**Freeze drying time is directly proportional to the _____ of the material being dried**
A	**Thickness**
B	**Square of the thickness**
C	**Cube of thickness**

D	**Fourth order of thickness**
Correct Answer	**B**

Q.No: 20	**Butter must contain_____% fat**
A	**60**
B	**70**
C	**80**
D	**90**
Correct Answer	**C**

Q.No: 21	**In a stall barn, the floor space required for each cow is between**
A	**3.50 to 5.50 m^2**
B	**5.6 to 7.5 m^2**
C	**7.6 to 9.5 m^2**
D	**9.6 to 11.6 m^2**
Correct Answer	**D**

Q.No: 22	**Paddy is normally stored at**
A	**12 per cent moisture content on dry basis**
B	**12 per cent moisture content on wet basis**
C	**15 per cent moisture content on wet basis**
D	**15 per cent moisture content on dry basis**
Correct Answer	**B**

Q.No: 23	**The orange color tomato is due to**
A	**Chlorophyll A**
B	**Anthocyanims**
C	**Xanthans**
D	**Lycopene**
Correct Answer	**D**

Q.No: 24	**Solar energy available outside earth's atmosphere per square meter is equal to about**
A	**350 W**
B	**200 W**
C	**1050 W**

D	**1350 W**
Correct Answer	**D**

Q.No: 25	**Energy required to break a drop of liquid into small droplets will be depend mainly on**
A	**The surface tension of the liquid**
B	**The viscosity of the liquid**
C	**The density of the liquid**
D	**The heat capacity of the liquid**
Correct Answer	**A**

Q.No: 26	**The major protein in wheat flour is**
A	**Zein**
B	**Gluten**
C	**Orzgenin**
D	**Hordenin**
Correct Answer	**B**

Q.No: 27	**Jenssen equation is related to**
A	**Storage silo design**
B	**Size reduction of particles**
C	**Grain transportation system**
D	**Size separation of grains**
Correct Answer	**A**

Q.No: 28	**Under falling rate period, the drying rate is proportional to the difference between**
A	**Critical and equilibrium moisture content**
B	**Initial and equilibrium moisture content**
C	**Initial and critical moisture content**
D	**Moisture content below critical and equilibrium moisture content**
Correct Answer	**D**

Q.No: 29	**The percentage of polish recommended for rice is**
A	**5 %**
B	**10 %**
C	**20 %**

D	**30 %**
Correct Answer	**A**

Q.No: 30	**When a thresher is giving more brocken grains, the reason for that is**
A	**Higher threshing cylinder speed**
B	**Lower cylinder speed**
C	**More cylinder concave clearance**
D	**None of these options are correct**
Correct Answer	**A**

Q.No: 31	**When a plough works round the strip of ploughed land, then its said to be**
A	**Gathering**
B	**Crowning**
C	**Casting**
D	**Ridging**
Correct Answer	**A**

Q.No: 32	**Bacterial population in milk increases 200 times in 18 hours of storage at 20^{o}C .The increase in population in 3 hours of storage at the same temperature is**
A	**1.34 times**
B	**2.42 times**
C	**7.02 times**
D	**14.14 times**
Correct Answer	**B**

Q.No: 33	**The fundamental principle of preserving food by heat is known as:**
A	**Pasteurization**
B	**Chemical preservation**
C	**Freezing**
D	**Sublimation**
Correct Answer	**A**

Q.No: 34	**If moisture content on wet basis is 25% then what would be the moisture content on dry basis**
A	**33 %**
B	**30 %**

C	**45 %**
D	**20 %**
Correct Answer	**A**

Q.No: 35	**The relation between RH (Relative humidity) and EMC (Equilibrium moisture content) is given by**
A	**Janssen**
B	**Rankine**
C	**Henderson**
D	**Newton**
Correct Answer	**C**

Q.No: 36	**Camber angle varies from**
A	**0.25° to 4°**
B	**10° to 12°**
C	**13° to 15°**
D	**16° to 20°**
Correct Answer	**A**

Q.No: 37	**Which of the following constituents of steel is softest and least strong**
A	**Austenite**
B	**Pearlite**
C	**Ferrite**
D	**Cementite**
Correct Answer	**C**

Q.No: 38	**The percentage of carbon in pig iron various from**
A	**0.1 to 1.2 %**
B	**1.5 to 2.5 %**
C	**2.5 to 4.0 %**
D	**4.0 to 4.5 %**
Correct Answer	**D**

Q.No: 39	**The material used for coating the electrode is called**
A	**Protective layer**
B	**Binder**

C	**Slag**
D	**Flux**
Correct Answer	**D**

Q.No: 40	**The metallic structure of mild steel is**
A	**Body centered cubic**
B	**Face centered close cubic**
C	**Hexagonal close packed**
D	**Cubic structure**
Correct Answer	**A**

Q.No: 41	**When welding is going on, arc voltage is of the order of**
A	**18 - 40 volts**
B	**40 - 95 volts**
C	**100 - 125 volts**
D	**130 - 170 volts**
Correct Answer	**A**

Q.No: 42	**Copper is**
A	**Easily spot welded**
B	**Very difficult to be spot welded**
C	**Cannot spot welded**
D	**None of these are correct**
Correct Answer	**B**

Q.No: 43	**The most commonly used flame in gas welding is**
A	**Neutral**
B	**Oxidising**
C	**Carburising**
D	**All the options are correct**
Correct Answer	**A**

Q.No: 44	**In machine tools, chatter is due to**
A	**Free vibrations**
B	**Random vibrations**

C	**Forced vibrations**
D	**Self-exicited vibrations**
Correct Answer	**D**

Q.No: 45	**Which test _____ is not related with fuel**
A	**Octane number**
B	**Reynolds number**
C	**Cetane number**
D	**None of these are correct**
Correct Answer	**B**

Q.No: 46	**To separate the mustered from wheat the recommended separator is**
A	**Indented cylinder separator**
B	**Specific gravity separator**
C	**Spiral separator**
D	**Air screen separator**
Correct Answer	**C**

Q.No: 47	**LSU dryer was developed at**
A	**Louisiana State University**
B	**IIT kharagpur**
C	**CIAE Bhopal**
D	**CFTRI Mysore**
Correct Answer	**A**

Q.No: 48	**Psychometric charts represents _____ properties of air**
A	**Chemical**
B	**Aerodynamic**
C	**Physico thermal**
D	**Hydroscopic**
Correct Answer	**C**

Q.No: 49	**The oil to be used in engine for lubrication purpose**
A	**SAE 90**
B	**SAE 50**

C	**SAE 30**
D	**None of these are correct**
Correct Answer	**C**

Q.No: 50	**Bore is**
A	**Diameter of an engine cylinder**
B	**Length of an engine cylinder**
C	**Area of an engine cylinder**
D	**None of these are correct**
Correct Answer	**A**

Q.No: 51	**Double mass analysis is used for testing the _____ of rainfall records at concerned station**
A	**adequacy**
B	**accuracy**
C	**consistency**
D	**degeneracy**
Correct Answer	**C**

Q.No: 52	**As the rainfall duration increases the rainfall intensity _____ .**
A	**decreases**
B	**increases**
C	**remains same**
D	**cannot be said**
Correct Answer	**A**

Q.No: 53	**_____ is referred as movement of sediment particles in a series of bounces over a channel bed surface.**
A	**Surface creep**
B	**Saltation**
C	**Suspension**
D	**None of these are correct**
Correct Answer	**B**

Q.No: 54	**_____ gullies develop in the areas where the sub soil is resistant erosion.**
A	**V shaped**

B	**U shaped**
C	**W shaped**
D	**None of these are correct**
Correct Answer	**A**

Q.No: 55	**Universal soil loss equation was proposed by _____ .**
A	**Musgrave and Zingg**
B	**Williams and Smith**
C	**Wishmeier and Smith**
D	**Wishmeier and Musgrave**
Correct Answer	**C**

Q.No: 56	**_____ is also known as channel - type terrace.**
A	**Broad base terrace**
B	**Narrow base terrace**
C	**Bench terrace**
D	**Staggered trenches**
Correct Answer	**A**

Q.No: 57	**The inequilibrium stage is also called as _____, which reveals that watershed is under development process.**
A	**Mature stage**
B	**Monadknock stage**
C	**Young stage**
D	**None of these are correct**
Correct Answer	**C**

Q.No: 58	**Function of emergency spillway in storage structure is to _____ .**
A	**Prevent overtopping**
B	**Prevent seepage**
C	**Prevent sloughing**
D	**None of these are correct**
Correct Answer	**A**

Q.No: 59	**The ratio of the area of watershed to the square of length of watershed is known as _____ .**

A	**Shape index**
B	**Form factor**
C	**Area ratio**
D	**Area length ratio**
Correct Answer	**B**

Q.No: 60	**Hydrologic response of the large watersheds is dominated by _____ .**
A	**Overland flow**
B	**Critical flow**
C	**Channel storage**
D	**Channel precipitation**
Correct Answer	**C**

Q.No: 61	**Unit hydrograph represents unit _____ .**
A	**Precipitation**
B	**Duration**
C	**Effective rainfall**
D	**Area of watershed**
Correct Answer	**C**

Q.No: 62	**The elevation difference in two consecutive terraces is known as _____ .**
A	**Contour interval**
B	**Horizontal interval**
C	**Vertical interval**
D	**None of these are correct**
Correct Answer	**C**

Q.No: 63	**_____ is used to determine the area of irregular shaped plan.**
A	**Clinometers**
B	**Odometer**
C	**Planimeter**
D	**Pentagraph**
Correct Answer	**C**

Q.No: 64	**_____ is any arbitrarily assumed level surface from which vertical distances are measured.**

A	**Bench mark**
B	**Datum surface**
C	**Horizontal plane**
D	**Collimation plane**
Correct Answer	**B**

Q.No: 65	**The resultant of all the forces acting on dam should be within the _____ of base to avoid any tension in the dam.**
A	**Initial third**
B	**Middle third**
C	**Final third**
D	**Limits**
Correct Answer	**B**

Q.No: 66	**World meteorological organization recommends that in flat regions one rain gauge station should be for _____ .**
A	**100 to 300 sq.km**
B	**300 to 600 sq.km**
C	**900 to 1200 sq.km**
D	**600 to 900 sq.km**
Correct Answer	**D**

Q.No: 67	**_____ trenches are shorter in length and are arranged along the contour with inter space between them.**
A	**Contour**
B	**Staggered**
C	**Continuous**
D	**None of these are correct**
Correct Answer	**B**

Q.No: 68	**The distance measured by 20m chain is 8 chain and 25 links, which will be equal to _____ .**
A	**241.5m**
B	**165.0m**
C	**544.5m**
D	**None of these are correct**
Correct Answer	**B**

Q.No: 69	**The contour interval on the toposheets, prepared by Survey of India, having the scale of 1:50000 is _____ m.**
A	**5**
B	**10**
C	**20**
D	**30**
Correct Answer	**C**

Q.No: 70	**A stream which receive groundwater flow is called _____**
A	**Influent stream**
B	**Ephemeral stream**
C	**Effluent stream**
D	**None of the these options are correct**
Correct Answer	**C**

Q.No: 71	**Most important cause of wind erosion is _____ .**
A	**Storms of high intensity**
B	**Clay size particles in soil**
C	**Mismanagement of land resources**
D	**Alkalinity of soil surface**
Correct Answer	**C**

Q.No: 72	**The factors 'L' and 'S' in USLE are combinedly called as _____ factor.**
A	**Topic**
B	**Topologic**
C	**Topographic**
D	**Physiologic**
Correct Answer	**C**

Q.No: 73	**Batter slope in bench terraces is mainly given for providing _____ to the fill material or embankment.**
A	**Support**
B	**Stability**
C	**Strength**
D	**None of these are correct**

Correct Answer	**B**

Q.No: 74	**Land use recommended for land capability class VIII is _____ .**
A	**Agriculture**
B	**Horticulture**
C	**Recreation**
D	**Agro-forestry**
Correct Answer	**C**

Q.No: 75	**The three sides of a triangular field are 24,45 and 51m respectively. Then the area of field is _____ m^2**
A	**540**
B	**612**
C	**1080**
D	**1147.5**
Correct Answer	**A**

Q.No: 76	**The number of hectares of the crop successfully raised with irrigation by constant flow of one cumec of water throughout the growth period is _____**
A	**Base**
B	**Delta**
C	**Duty**
D	**None of these are correct**
Correct Answer	**C**

Q.No: 77	**Suction lift exists when the source of water supply is _____ .**
A	**Above the center line of pump**
B	**At the center line of pump**
C	**Below the center line of pump**
D	**None of these are correct**
Correct Answer	**C**

Q.No: 78	**An aquifer found between two impervious layers is said to be _____ .**
A	**Leaky aquifer**
B	**Non artesian aquifer**
C	**Artesian aquifer**

D	**Semi confined aquifer**
Correct Answer	**C**

Q.No: 79	**Break horse power of centrifugal pump increases as the discharge _____ .**
A	**Decreases**
B	**Remains unchanged**
C	**Increases**
D	**None of these are correct**
Correct Answer	**C**

Q.No: 80	**I. The application rate of sprinkler depends on the size of sprinkler nozzle.** **II. The application rate of sprinkler depends on operating pressure and spacing between the sprinklers.** **Which of the following statements is correct**
A	**Statement I is correct and II is incorrect**
B	**Statement II is correct and I is incorrect**
C	**Both statements I and II are correct**
D	**Both statements II and I are incorrect**
Correct Answer	**C**

Q.No: 81	**As compared to conventional irrigation, _____ saving of water can be achieved by drip irrigation.**
A	**5 to 10%**
B	**10 to 15 %**
C	**15 to 30 %**
D	**40 to 60 %**
Correct Answer	**D**

Q.No: 82	**Drip irrigation can achieve the efficiency of about _____%.**
A	**90 to 95**
B	**70 to 85**
C	**60 to 70**
D	**40 to 60**
Correct Answer	**A**

Q.No: 83	**The electrical conductivity of alkali soils is usually _____ .**

A	**10 to 12 ds m^{-1}**
B	**6 to 8 ds m^{-1}**
C	**4 to 6 ds m^{-1}**
D	**Less than 4 ds m^{-1}**
Correct Answer	**D**

Q.No: 84	**Gypsum is commonly used for reclamation of _____ type of soil.**
A	**Vertisol**
B	**Sodic**
C	**Saline**
D	**Inceptisol**
Correct Answer	**B**

Q.No: 85	**The drainable porosity at saturation is _____ .**
A	**100**
B	**50**
C	**0**
D	**None of these are correct**
Correct Answer	**C**

Q.No: 86	**Drainage coefficient is the depth of water (cm) to be removed from an area in a period of**
A	**12 hours**
B	**24 hours**
C	**6 hours**
D	**10 hours**
Correct Answer	**B**

Q.No: 87	**The speed of sprinkler head should be about _____ for maximum coverage.**
A	**4-6 rpm**
B	**3-4 rpm**
C	**2-3 rpm**
D	**Less than 1 rpm**
Correct Answer	**D**

Q.No: 88	**A sheet of water, which overflows a weir, is called as _____ .**

A	**Nappe**
B	**Head**
C	**Either (Nappe) OR (Head)**
D	**None of these are correct**
Correct Answer	**A**

Q.No: 89	**_____ is the soil moisture content at which the wilting is complete and the plants die.**
A	**Permanent wilting point**
B	**Temporary wilting point**
C	**Ultimate wilting point**
D	**Wilting range**
Correct Answer	**C**

Q.No: 90	**The downward movement of water through saturated or nearly saturated soil in response to the gravity is called as _____ .**
A	**Infiltration**
B	**Interflow**
C	**Percolation**
D	**Seepage**
Correct Answer	**C**

Q.No: 91	**The validity of Darcy's law is limited by the condition that the flow through the porous medium must be _____ .**
A	**Laminar**
B	**Transient**
C	**Turbulent**
D	**None of these are correct**
Correct Answer	**A**

Q.No: 92	**The quantity of water that can be extracted by the gravity from unit volume of the unconfined aquifer is called as _____ .**
A	**Specific capacity**
B	**Specific storage**
C	**Specific yield**
D	**Specific gravity**
Correct Answer	**C**

Q.No: 93	**Water application efficiency in sprinkler irrigation is the ratio of water stored in the root zone to the _____ .**
A	**Water needed in the root zone**
B	**Water diverted from source**
C	**Water delivered to the field**
D	**Water pumped from source**
Correct Answer	**C**

Q.No: 94	**Quantity of water discharged in tile drain increases due to** **I. Increase in drain spacing and increase in depth of drain** **II. Reduction in drain spacing and reduction in depth of drain** **Which of the following is correct?**
A	**Statement I is true and statement II is false**
B	**Statement II is true and statement I is false**
C	**Both statements I and II are true**
D	**Both statements I and II are false**
Correct Answer	**D**

Q.No: 95	**Evapotranspiration is measured by _____ .**
A	**Blaney - criddle method**
B	**Lysimeter**
C	**Penman method**
D	**All are correct**
Correct Answer	**B**

Q.No: 96	**What would be delta for a crop when its duty is 864 hectare /cumec on a field, if the base period of the crop is 120 days?**
A	**72**
B	**120**
C	**6220.8**
D	**None of these are correct**
Correct Answer	**B**

Q.No: 97	**_____ is used as crop for determination of reference crop evapotranspiration.**
A	**Sunflower**
B	**Stylo grass**

C	**Alfalfa grass**
D	**Sugar cane**
Correct Answer	**C**

Q.No: 98	**In hard rock terrains _____ wells are recommended.**
A	**Open wells**
B	**Bore wells**
C	**Both 'Open wells' and 'Bore wells'**
D	**None of these are correct**
Correct Answer	**A**

Q.No: 99	**Wheat crop require 45 cm irrigation water during 120 days of base period. How much area can be irrigated with a flow of 20 liter per second for 22 hours per day?**
A	**41.24 ha.**
B	**42.24 ha.**
C	**43.24 ha.**
D	**45.24 ha.**
Correct Answer	**B**

Q.No: 100	**The discharge of a centrifugal pump is 6000 liter/min against a head of 15m. The pump efficiency is 60 per cent. What would be the size of motor required?**
A	**31.3 hp**
B	**33.3 hp**
C	**35.3 hp**
D	**None of these are correct**
Correct Answer	**B**

State Engineering (Prelims) Exam – 2016

Second Paper – Second Shift

(Provisional Model Answer Key)

Civil Engineering

Q.No: 1	**If f_{ck} f is the characteristic strength of concrete then as per the Indian Standard (IS) 456: 2000, the modulus of elasticity of the concrete is**
A	**5700**$\sqrt{f_{ck}}$
B	**5200**$\sqrt{f_{ck}}$
C	**5000**$\sqrt{f_{ck}}$
D	**None of these are correct**
Correct Answer	**C**

Q.No: 2	**The minimum tension reinforcement required in the concrete beam should not be less than (here, width of the beam = b ; depth of the beam = d ; and yield strength of steel= f_v)**
A	$0.04\,b\cdot d$
B	$\frac{0.12}{100}b\cdot d$
C	$\frac{0.85\,b\cdot d}{f_y}$
D	$\frac{0.87\,b\cdot d}{f_y}$
Correct Answer	**C**

Q.No: 3	**The one-way simply-supported slab for a room of plan dimensions 9 m x 4 m carries ultimate working load of 9 kN/m. The design moment for the slab should be**
A	**12.00 kN.m**
B	**18.00 kN.m**
C	**9.00 kN.m**
D	**27.00 kN.m**
Correct Answer	**B**

Q.No: 4	**A reinforced concrete (RC) column with slenderness ratio greater than 12 is classified as**
A	**short column**
B	**long column**
C	**axially loaded column**
D	**stub column**
Correct Answer	**B**

Q.No: 5	**The critical section for computing maximum bending moment for the design of isolated footing supporting a concrete column is (considering *d* as distance between the column face and the footing edge)**
A	**at the face of the column**
B	**at a distance *d* from the column face**
C	**at the center of the column**
D	**at a distance *d*/2 from the column face**
Correct Answer	**A**

Q.No: 6	**As per the Indian Standard (IS) 3370 : 2009, the minimum grade of concrete to be used in liquid retaining structures should be**
A	**M20**
B	**M25**
C	**M30**
D	**M15**
Correct Answer	**C**

Q.No: 7	**A vertical wall of a circular bunker is subjected to horizontal pressure due to coal stored therein. The wall of the bunker is designed for**
A	**Axial tension**
B	**Hoop tension and shear force**
C	**Hoop tension and bending moment**
D	**All are correct**
Correct Answer	**C**

Q.No: 8	**In a 10 m long simply-supported prestressed concrete beam, if prestressing force = P; eccentricity = e; area of cross-section = A; section modulus = Z; bending moment due to dead load = M_d; bending moment due to live load = M_d, the resultant stress due to dead load and live load at top fiber at mid-span is given by**

A	$\left(\frac{P}{A}-\frac{P\cdot e}{Z}\right)+\left(\frac{M_g}{Z}\right)+\left(\frac{M_q}{Z}\right)$
B	$\left(\frac{P}{A}+\frac{P\cdot e}{Z}\right)+\left(\frac{M_g}{Z}\right)+\left(\frac{M_q}{Z}\right)$
C	$\left(\frac{P}{A}-\frac{P\cdot e}{Z}\right)-\left(\frac{M_g}{Z}\right)-\left(\frac{M_q}{Z}\right)$
D	$\left(\frac{P}{A}+\frac{P\cdot e}{Z}\right)-\left(\frac{M_g}{Z}\right)-\left(\frac{M_q}{Z}\right)$
Correct Answer	**A**

Q.No: 9	**As per the Indian Standard (IS) 800 : 2007, the partial safety factor for material resistance governed by yielding failure of the steel is**
A	**1.10**
B	**1.15**
C	**1.20**
D	**1.50**
Correct Answer	**A**

Q.No: 10	**A solid steel plate having yield strength of 250 MPa, the design strength in yielding (N/mm^2) is**
A	**200**
B	**217**
C	**227**
D	**250**
Correct Answer	**C**

Q.No: 11	**A plate of size 100 mm x 10 mm having yield strength of 250 MPa, the design strength of plate in yielding of the cross-section is**
A	**167 kN**
B	**200 kN**
C	**217 kN**
D	**227 kN**
Correct Answer	**D**

Q.No: 12	**The Indian Standard (IS) 800: 2007 divides various compression member cross-sections into how many buckling classes?**
A	**1**
B	**2**
C	**3**
D	**4**
Correct Answer	**D**

Q.No: 13	**As per the Indian Standard (IS) 800 : 2007, with respect to serviceability and when transverse stiffeners are not provided, the *d*/t_w ratio of the web should be less than or equal to (depth of web = *d*; thickness of web = t_w; and yield stress ratio of web = ε_w)**
A	**400** ε_w
B	**250** ε_w
C	**200** ε_w
D	**150** ε_w
Correct Answer	**C**

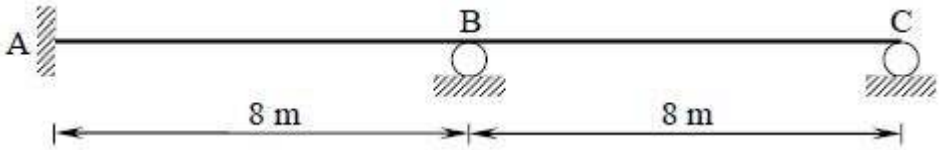
Q.No: 14	**In the design of a base plate, the bearing strength of concrete as per the Indian Standard (IS) 800 : 2007, is taken as (f_{ck} is characteristic strength of concrete)**
A	**0.4** f_{ck}
B	**0.45** f_{ck}
C	**0.5** f_{ck}
D	**0.60** f_{ck}
Correct Answer	**B**

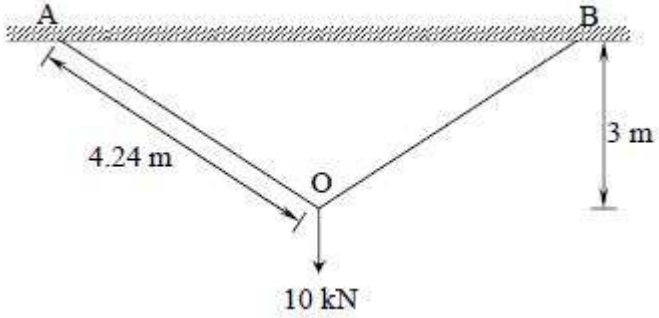
Q.No: 15	**The Indian Standard (IS) 800 : 2007 recommends, in taking advantage of reduced design forces, that the purlins be designed as**
A	**continuous beams**
B	**simply-supported beams**
C	**cantilever beams**
D	**tension members**
Correct Answer	**A**

Q.No: 16	**The principal rafter of roof truss is inclined at an angle of 15°. No access is provided except maintenance. The roof is subjected to imposed load of 0.75 kN/m^2, the design imposed load is**
A	**1.50 kN/m^2**
B	**0.75 kN/m^2**

C	**0.65 kN/m^2**
D	**0.40 kN/m^2**
Correct Answer	**C**

Q.No: 17	**The plastic modulus of rectangular beam of width 200 mm and depth 400 mm is**
A	**2 x 10^6 mm^3**
B	**5.33 x 10^6 mm^3**
C	**8 x 10^6 mm^3**
D	**1.07 x 10^9 mm^3**
Correct Answer	**C**

Q.No: 18	**The stiffness matrix for the beam shown in the following figure is** 
A	$\frac{EI}{4}\begin{bmatrix}4 & 1\\ 1 & 4\end{bmatrix}$
B	$\frac{EI}{4}\begin{bmatrix}4 & 1\\ 1 & 2\end{bmatrix}$
C	$\frac{EI}{2}\begin{bmatrix}4 & 1\\ 1 & 2\end{bmatrix}$
D	$\frac{EI}{2}\begin{bmatrix}4 & 1\\ 1 & 4\end{bmatrix}$
Correct Answer	**B**

Q.No: 19	**Using strain energy method, the vertical deflection at O is (take modulus of elasticity, E = 2 x 10^5 N/mm^2, cross-sectional area of wire, A = 100 mm^2).** 
A	**2.12 mm**
B	**21.2 mm**

C	**1.50 mm**
D	**15.0 mm**
Correct Answer	**A**

Q.No: 20	**If m is number of members; r is reactions; and j is number of joints then in case of a planar structure, 3m + r < 3j leads to**
A	**stable structure**
B	**determinate structure**
C	**unstable structure**
D	**indeterminate structure**
Correct Answer	**C**

Q.No: 21	**The Ryve's formula to determine the design discharge from catchment is given by (constant depending on nature of the catchment and location = C; catchment area in square kilometers = A)**
A	**$CA^{3/2}$**
B	**$CA^{2/3}$**
C	**$AC^{3/2}$**
D	**$AC^{2/3}$**
Correct Answer	**B**

Q.No: 22	**Maximum shear stress for rectangular section is (total transverse shear at the section = V; entire cross-sectional area = A)**
A	$\frac{3V}{A}$
B	$\frac{2V}{3A}$
C	$\frac{3V}{2A}$
D	$\frac{V}{2A}$
Correct Answer	**C**

Q.No: 23	**Maximum deflection at the mid-span of a simply-supported beam of span l, with uniformly distributed load (w) all over the beam span, and flexural rigidity EI, is (modulus of elasticity = E; moment of inertia of beam = I)**

A	$\frac{5wl^4}{48EI}$
B	$\frac{5wl^4}{384EI}$
C	$\frac{wl^3}{48EI}$
D	$\frac{wl^3}{3EI}$
Correct Answer	**B**

Q.No: 24	**In PERT analysis of a project having large number of activities in its critical path, which of the following assumption is correct?**
A	**Both activity durations and project completion time follow β - distribution**
B	**Both activity durations and project completion time follow normal distribution**
C	**Activity durations follow normal distribution, but project completion time follows β - distribution**
D	**Activity durations follow β - distribution, but project completion time follows normal distribution**
Correct Answer	**D**

Q.No: 25	**Latest start of an activity is always**
A	**greater than or equal to latest event times of all the preceding nodes**
B	**less than or equal to earliest event times of all the preceding nodes**
C	**equal to the latest event times of all the preceding nodes**
D	**equal to the earliest event time of all the preceding nodes**
Correct Answer	**A**

Q.No: 26	**Downtime of an equipment is**
A	**the time when equipment shall have to be returned to the owner due to expiry of its lease period**
B	**the period of time when equipment is idle for want of work**
C	**the period of time that the equipment fails to provide or perform its primary function**
D	**the time when contractor has to do the down payment before taking equipment on rent**
Correct Answer	**C**

Q.No: 27	**Among the following excavators, the most suitable excavator for dredging purposes will be**
A	**back hoe**
B	**front shovel**
C	**scraper**
D	**dragline**
Correct Answer	**D**

Q.No: 28	**Physical life of an equipment is defined as**
A	**age at which the equipment is worn out and it can no longer reliably produce**
B	**the life over which the equipment can earn a profit**
C	**time period that maximizes the profit over the equipment life**
D	**age at which depreciation cost exceeds the purchase cost**
Correct Answer	**A**

Q.No: 29	**Outriggers are used for**
A	**crawler mounted mobile cranes to enhance its stability**
B	**wheel mounted mobile cranes to enhance its stability**
C	**fixing the lattice boom in a crane**
D	**fixing the telescopic boom in a crane**
Correct Answer	**B**

Q.No: 30	**The relationship between the capital recovery factor and sinking fund factor in a uniform series of payments is given by**
A	**Capital recovery factor = Sinking fund factor - Interest rate**
B	**Capital recovery factor = Sinking fund factor - (Interest rate)^2**
C	**Capital recovery factor = Sinking fund factor + (Interest rate)^2**
D	**Capital recovery factor = Sinking fund factor + Interest rate**
Correct Answer	**D**

Q.No: 31	**A recurring deposit of Rs. 5000 per month for 12 installments will grow to _____ at the end of 12 months for the given nominal interest rate of 12 percent, but compounded monthly (consider deposit being done on the last day of the month and also accrual of interest being calculated on the last day of the month).**
A	**Rs. 60,000**
B	**Rs. 62,834**

C	**Rs. 63,413**
D	**Rs. 64,047**
Correct Answer	**C**

Q.No: 32	**While comparing alternatives of different lives, most preferred method would be**
A	**net present worth analysis**
B	**net future worth analysis**
C	**net annual worth analysis**
D	**break even analysis**
Correct Answer	**C**

Q.No: 33	**Earnest money is generally asked to be deposited**
A	**at the time of purchase of tender document**
B	**at the time of submission of bid**
C	**by the successful bidder after he gets the letter of acceptance**
D	**at the time of entering the agreement**
Correct Answer	**B**

Q.No: 34	**A contractor agreed to build 30 temporary sheds in 90 days at a price of Rs. 10000/unit. Twenty days later, the contractor has finished 8 sheds with an actual total cost of Rs. 85000. What is the status of the project?**
A	**The project is time and cost overrun**
B	**The project is time overrun and cost under run**
C	**The project is time under run and cost overrun**
D	**The project is time and cost under run**
Correct Answer	**C**

Q.No: 35	**If the excavation of earth is done manually then it costs Rs. 80 per m^3. A Machine can excavate at a fixed cost of Rs. 60000 plus a variable cost of Rs. 20 per m^3. The quantity of earth for which the cost of excavation by machine will be equal to the cost by manual excavation is**
A	**500 m^3**
B	**1000 m^3**
C	**1500 m^3**
D	**2000 m^3**
Correct Answer	**B**

Q.No: 36	**A solution has 100 mg/L NH_3 and 100 mg/L glucose. Calculate theoretical oxygen demand of this solution?**
A	**483.14 mg/L**
B	**106.67 mg/L**
C	**400 mg/L**
D	**350 mg/L**
Correct Answer	**A**

Q.No: 37	**Say a raw wastewater sample from AA WWTP has 5-day BOD equals to 2000 mg/L (reaction constant k = 0.23/day at 20^{o}C). Calculate value of ultimate BOD?**
A	**2826 mg/L**
B	**2296 mg/L**
C	**2000 mg/L**
D	**2926 mg/L**
Correct Answer	**D**

Q.No: 38	**Calculate pOH of a buffer solution containing 0.02M acetic acid and 0.02M sodium acetate? (given pKa = 4.74)**
A	**9.0**
B	**6.0**
C	**9.26**
D	**4.0**
Correct Answer	**C**

Q.No: 39	**Identify coagulant with highest power for coagulating positive colloids: $FeCl_3$; Na_3SO_4; $C_6H_{12}O_6$; Na_3PO_4**
A	**$FeCl_3$**
B	**Na_3SO_4**
C	**$C_6H_{12}O_6$**
D	**Na_3PO_4**
Correct Answer	**D**

Q.No: 40	**A treated wastewater (initial contaminant concentration, flow rate = 5C, 0.2Q) enters a stream (initial concentration, flow rate = 0.01C, Q). Calculate contaminant concentration in stream immediately after mixing of wastewater with stream water?**
A	**0.84C**
B	**0.04C**
C	**1.0Q**

D	**1.2Q**
Correct Answer	**A**

Q.No: 41	**What is the remaining percentage of pathogens after 1 minute of contact time during chlorination? (Assume K = 0.046/min).**
A	**90%**
B	**95.50%**
C	**99%**
D	**88%**
Correct Answer	**B**

Q.No: 42	**Calculate number of moles of oxygen required for reacting with one mole of ammonium ions to convert to nitrate ions?**
A	**2**
B	**2.5**
C	**3**
D	**4**
Correct Answer	**A**

Q.No: 43	**An experiment shows that a concentration of 0.1 g/m^3 of free available chlorine yield a 99% kill of bacteria in 8 minutes. Calculate disinfection rate constant (1 /min)? Assume that Chick's Law and Watson's Law hold with n = 1.**
A	**0.4706 /min**
B	**0.2056 /min**
C	**0.7056 /min**
D	**0.5756 /min**
Correct Answer	**D**

Q.No: 44	**Look at the following relationship between concentration of free residual chlorine and contact time required for 99% kill (Watson's Law: $C^{0.86} t_p = \lambda$(constant) for different pathogens).** Pathogen type | Adenovirus 3 | *E.coli* | Coxsackievirus A2 | AA λ (constant) | 0.098 | 0.24 | 6.3 | 0.110 **Which pathogen has maximum resistance for chlorination?**
A	**E.coli**
B	**Adenovirus**
C	**Coxsackievirus A2**
D	**AA**

Correct Answer	**C**

Q.No: 45	**Determine maximum adsorption capacity of alumina (Langmuir isotherm: Q = $[22C_t]/[1+35C_t]$ where Q is mol Anthracene/kg alumina; C_t = mol Anthracene/L liquid)?**
A	**0.02 mol/kg**
B	**0.629 mol/kg**
C	**375 L/mol**
D	**22 mol/kg**
Correct Answer	**B**

Q.No: 46	**Look at the following table:** Non carbonate hardness: 92 mg/L as $CaCO_3$ — Total magnesium: 15 mg/L Alkalinity: 68 mg/L as $CaCO_3$ — Desired total hardness in water: 80 mg/L as $CaCO_3$ Residual carbonate hardness (cannot be removed): 35 mg/L as $CaCO_3$ **Calculate amount of magnesium hardness (in mg/L as $CaCO_3$)?**
A	**31.25 mg/L as $CaCO_3$**
B	**3.12 mg/L as $CaCO_3$**
C	**10 mg/L as $CaCO_3$**
D	**100 mg/L as $CaCO_3$**
Question Deleted	

Q.No: 47	**Calculate contribution of removal of phosphorous in primary settling tank to overall removal in wastewater treatment plant? Plant schematic is: Influent water → Primary settling tank → Biological aeration tank → Secondary settling tank → Effluent water.** Parameter: phosphorous — Influent water: 7 mg/L — After settling (i.e. influent to aeration tank): 6 mg/L — Effluent water: 5 mg/L
A	**40%**
B	**45%**
C	**50%**
D	**52%**
Correct Answer	**C**

Q.No: 48	**A wastewater treatment plant disposes of its effluent in a surface stream. Characteristics of the stream and effluent are shown below.**

	<table><tr><th>Parameter</th><th>wastewater</th><th>Stream water</th><th>Wastewater mix stream water</th></tr><tr><td>Flow (m^3/s)</td><td>0.2</td><td>4</td><td></td></tr><tr><td>Dissolved oxygen, mg/L</td><td>1</td><td>7</td><td></td></tr><tr><td>BOD_5 at 20°C, mg/L</td><td>100</td><td>2</td><td></td></tr><tr><td>Oxygen consumption rate (K1 at 20°C) (1/day)</td><td>0.2</td><td>0.2</td><td>0.23</td></tr><tr><td>Oxygen reaeration rate (K2 at 20°C) (1/day)</td><td>–</td><td>0.3</td><td>0.3</td></tr></table> **For 20°C stream water temperature, equilibrium concentration of oxygen = 9.17 mg/L. Assuming no temperature correction is required, answer the following: Calculate ultimate BOD of wastewater and stream water mix water?**
A	**8.5 mg/L**
B	**9 mg/L**
C	**9.5 mg/L**
D	**9.76 mg/L**
Question Deleted	

Q.No: 49	**An anaerobic reactor, operated at 35°C, treats wastewater with a flow of 200 m^3/d and a biological soluble COD (bsCOD) concentration of 500 g/m^3. At 90% bsCOD removal and a biomass synthesis yield of 0.04 g Volatile Suspended Solids/ g bsCOD used, calculate amount of COD consumed (in kg/d)?**
A	**90**
B	**100**
C	**50**
D	**110**
Correct Answer	**A**

Q.No: 50	**Lake water contains phosphate ions. Which specie would be formed if ferric ions in form of ferric chloride are added in lake water?**
A	**Sodium chloride**
B	**Ferric chloride**
C	**Ferric phosphate**
D	**Ferrous hydroxide**
Correct Answer	**C**

Q.No: 51	**Order 4 solutions in decreasing order of their BOD values?**
A	**Industrial water > river water > tap water > bottled water**
B	**Tap water > bottled water > river water > industrial water**
C	**Bottled water > tap water > river water > industrial water**

D	**River water > industrial water > tap water > bottled water**
Correct Answer	**A**

Q.No: 52	**Order 4 disinfectants in increasing order of their disinfection power?**
A	**Ozone < HOCl < monochloramine < NCl_3**
B	**Ozone < NCl_3 < Monochloramine < HOCl**
C	**NCl_3 < HOCl < Monochloramine < Ozone**
D	**NCl_3 < Monochloramine < HOCl < Ozone**
Correct Answer	**D**

Q.No: 53	**A soil sample having a void ratio of 1.3, water content of 50% and a specific gravity of 2.60, is in a state of**
A	**partial saturation**
B	**full saturation**
C	**over saturation**
D	**under saturation**
Correct Answer	**B**

Q.No: 54	**Given for a sample of a river sand:** **Void ratio at the densest state = 0.40** **Void ratio at the loosest state = 1.20** **Which one of the following correctly represents the relative density of a sample prepared with a void ratio of 1.0?**
A	**12.5 %**
B	**25 %**
C	**75 %**
D	**87.5 %**
Correct Answer	**B**

Q.No: 55	**Which one of the following equations correctly gives the relationship between the specific gravity of soil grains (G) and the hydraulic gradient (i) to initiate 'quick' condition in sand having a void ratio of 0.5?**
A	**G = 0.5i + 1**
B	**G = i + 0.5**
C	**G = 1.5i + 1**
D	**G = 1.5i - 1**
Correct Answer	**C**

Q.No: 56	**A flownet of a cofferdam foundation has 6 flow channels and 18 equipotential drops. The head loss during seepage is 6 m. If the coefficient of permeability of soil is 4×10^{-5} m/min, then the seepage loss (m^3/day) is**
A	**72**
B	**8**
C	**0.115**
D	**1.037**
Correct Answer	**C**

Q.No: 57	**A concentrated load of 50 kN acts vertically at a point on the soil surface. If Boussinesq's equation is applied for computation of stress, then the ratio of vertical stresses at depths of 3 m and 5 m respectively vertically below the point of application of load is**
A	**0.36**
B	**0.60**
C	**1.66**
D	**2.77**
Correct Answer	**D**

Q.No: 58	**While increasing the pressure to 150 kPa from 50 kPa, the change in void ratio of soil is observed as 0.12 in a consolidation test. The compression index of soil is**
A	**0.03**
B	**0.06**
C	**0.25**
D	**0.19**
Correct Answer	**C**

Q.No: 59	**For a certain loading condition, a saturated clay layer undergoes 40% consolidation in a period of 178 days. What would be the additional time required for further 20% consolidation to occur?**
A	**89 days**
B	**222.5 days**
C	**267 days**
D	**400.5 days**
Correct Answer	**B**

Q.No: 60	**A slope is to be constructed at an angle of 30° to the horizontal from a soil having the properties, c = 15 kN/m^2, γ = 19 kN/m^3. Taylor's stability number is 0.046. If a factor of safety (with respect to cohesion) of 1.5 is required, then the safe height of the slope will be**

A	**25.7 m**
B	**17.2 m**
C	**12.8 m**
D	**11.4 m**
Correct Answer	**D**

Q.No: 61	**Consider the following statements:** **1. A recovery ratio of less than 1 implies that the soil has compressed.** **2. A recovery ratio of greater than 1 implies that the soil has swelled.** **3. A recovery ratio of less than 1 implies that the soil has swelled.** **4. A recovery ratio of greater than 1 implies that the soil has compressed.** **Which of these statements is/are correct?**
A	**1 and 2**
B	**1 only**
C	**3 and 4**
D	**4 only**
Correct Answer	**A**

Q.No: 62	**A soil has an angle of shearing of 30° and cohesion of 35 kN/m^2. If the specimen of this soil is subjected to a tri-axial compression test, then the value of lateral pressure in the cell for failure to occur at total stress of 300 kN/m^2 will be**
A	**243.21 kN/m^2**
B	**44.41 kN/m^2**
C	**103.21 kN/m^2**
D	**59.59 kN/m^2**
Correct Answer	**D**

Q.No: 63	**An earth-retaining structure may be subjected to the following lateral earth pressures:** **1. Earth pressure at rest;** **2. Passive earth pressure;** **3. Active earth pressure.** **The correct sequence of the increasing order of magnitudes of these pressures is**
A	**3, 2, 1**
B	**1, 3, 2**
C	**1, 2, 3**
D	**3, 1, 2**
Correct Answer	**D**

Q.No: 64	**A retaining wall retains a sand strata with ϕ = 30° up to its top. If a uniform surcharge of**

	12 t/m^2 is subsequently put on the sand strata, then the increase in the lateral earth pressure intensity on the retaining wall will be
A	**0 t/m^2**
B	**4 t/m^2**
C	**6 t/m^2**
D	**12 t/m^2**
Correct Answer	**B**

Q.No: 65	**Consider the following statements associated with local shear failure of soils:** **1. Failure is sudden with well-defined ultimate load.** **2. This failure occurs in highly compressible soils.** **3. Failure is preceded by large settlement.** **Which of these statements are correct ?**
A	**1, 2 and 3**
B	**1 and 2**
C	**2 and 3**
D	**1 and 3**
Correct Answer	**C**

Q.No: 66	**For a proposed building, raft foundation, isolated footings and combined footings are being considered. These foundations are to be listed in the decreasing order of preference in terms of performance. Which one of the following is the correct order of listing ?**
A	**Raft foundation - Combined footings - Isolated footings**
B	**Isolated footings - Raft foundations - Combined footings**
C	**Combined footings - Raft foundations - Isolated footings**
D	**Combined footings - Isolated footings - Raft foundations**
Correct Answer	**A**

Q.No: 67	**Consider the following statements regarding negative skin friction in piles:** **1. It is developed when the pile is driven through a recently deposited clay layer.** **2. It is developed when the pile is driven through a layer of dense sand.** **3. It is developed due to a sudden drawdown of the water table.** **Which of these statements is /are correct ?**
A	**1 alone**
B	**2 alone**
C	**2 and 3**
D	**1 and 3**
Correct Answer	**D**

Q.No: 68	**A square pile of section 30 cm x 30 cm and length 10 m penetrates a deposit of clay having c = 50 kN/m^2 and the adhesion factor = 0.8. The load carried by the pile shaft only is**
A	**1920 kN**
B	**750 kN**
C	**600 kN**
D	**480 kN**
Correct Answer	**D**

Q.No: 69	**The natural frequency of a system increases with**
A	**an increase in the stiffness of the system**
B	**a decrease in the mass of the system**
C	**both increase in the stiffness of the system and decrease in the mass of the system**
D	**neither increase in the stiffness of the system nor decrease in the mass of the system**
Correct Answer	**C**

Q.No: 70	**Which of the following is true in case of railway track maintenance ?**
A	**Claw bar is used to correct track alignment while crow bar is used to remove dog spikes**
B	**Crow bar is used to correct track alignment while claw bar is used to remove dog spikes**
C	**Only claw bar can be used to correct track alignment and remove dog spikes**
D	**Only crow bar can be used to correct track alignment and remove dog spikes**
Correct Answer	**B**

Q.No: 71	**Choice of gauge depends on**
A	**volume of traffic only**
B	**speed of train only**
C	**neither (volume of traffic) nor (speed of train)**
D	**both (volume of traffic) and (speed of train)**
Correct Answer	**D**

Q.No: 72	**Switch angle depends on**
A	**heel divergence only**
B	**length of tongue rail only**
C	**neither (heel divergence) nor (length of tongue rail)**
D	**both (heel divergence) and (length of tongue rail)**

Correct Answer	**D**

Q.No: 73	**The reception signal is**
A	**outer signal only**
B	**starter only**
C	**neither (outer signal) nor (starter)**
D	**both (outer signal) and (starter)**
Correct Answer	**A**

Q.No: 74	**As per ICAO, for A, and B type of airports, maximum effective grade is**
A	**1.75%**
B	**1.5%**
C	**1.25%**
D	**1%**
Correct Answer	**D**

Q.No: 75	**The capacity of parallel runway system depends primarily on**
A	**lateral spacing between two runways**
B	**distance from terminal**
C	**slopes of adjacent areas**
D	**length of runways**
Correct Answer	**A**

Q.No: 76	**The basic runway length should be increased at the rate of X percent per Y m rise in elevation above mean sea level, where.**
A	**X = 6; Y = 200**
B	**X = 7; Y = 300**
C	**X = 7; Y = 200**
D	**X = 6; Y = 300**
Correct Answer	**B**

Q.No: 77	**Wind rose diagram is used for the purpose of deciding**
A	**runway orientation**
B	**runway capacity**
C	**runway cross-section**
D	**location of taxiways**

Correct Answer	**A**

Q.No: 78	**Among various stages of survey in highway alignment, the correct sequence is**
A	**reconnaissance, map study, and preliminary survey**
B	**reconnaissance, map study, and detailed survey**
C	**map study, reconnaissance, preliminary survey and detailed survey**
D	**none of these are correct**
Correct Answer	**C**

Q.No: 79	**Reaction time of driver increases with**
A	**increase in vehicle length**
B	**decrease in vehicle speed**
C	**increase in vehicle speed**
D	**decrease in vehicle length**
Correct Answer	**B**

Q.No: 80	**Enoscope is used to find**
A	**space-mean speed only**
B	**spot speed only**
C	**spot speed and space-mean speed**
D	**flow of vehicles only**
Correct Answer	**B**

Q.No: 81	**Desire lines are plotted in**
A	**origin and destination studies**
B	**speed studies**
C	**axle load studies**
D	**none of these are correct**
Correct Answer	**A**

Q.No: 82	**The length of transition curve is dependent on**
A	**rate of change of superelevation**
B	**rate of change of centrifugal acceleration**
C	**both rate of change of superelevation and rate of change of centrifugal acceleration**
D	**neither rate of change of superelevation nor rate of change of centrifugal acceleration**

Correct Answer	**C**

Q.No: 83	**Which of the following is used in a regular pavement maintenance activity?**
A	**Tack coat**
B	**Prime coat**
C	**Fog seal**
D	**None of these are correct**
Correct Answer	**C**

Q.No: 84	**The flow-mass curve is graphical representation of**
A	**cumulative discharge and time**
B	**discharge and percentage probability of flow being equaled or exceeded**
C	**cumulative discharge, volume and time in chronological order**
D	**discharge and time in chronological order**
Correct Answer	**C**

Q.No: 85	**Instantaneous unit hydrograph is a hydrograph of**
A	**unit duration**
B	**unit rainfall excess infinitely small duration**
C	**unit rainfall excess infinitely long duration**
D	**zero effective rainfall**
Correct Answer	**B**

Q.No: 86	**For a catchment area of 120 km^2, the equilibrium discharge in m^3/hour of an S-curve obtained by the summation of 6 hour unit hydrograph is**
A	**0.2×10^6**
B	**0.6×10^6**
C	**2.4×10^6**
D	**7.2×10^6**
Correct Answer	**A**

Q.No: 87	**In India, which of the following is adopted as standard recording raingauge?**
A	**Symon's raingauge**
B	**Tipping bucket type**
C	**Syphon type**
D	**Weighing bucket type**

Correct Answer	**C**

Q.No: 88	**The maximum average depth due to one day storm over an area of 100 km^2 is 100 mm. Depth-Area-Duration (DAD) curves indicate that for the same area of 100 km^2 the maximum average depth for a 3 hour storm will be**
A	**100 mm**
B	**more than 100 mm**
C	**less than 100 mm**
D	**none of these are correct**
Correct Answer	**C**

Q.No: 89	**The most suitable chemical which can be applied to the water surface for reducing evaporation is**
A	**methyl alcohol**
B	**ethyl alcohol**
C	**cetyl alcohol**
D	**butyl alcohol**
Correct Answer	**C**

Q.No: 90	**Seepage through embankments in an earthen dam is controlled by**
A	**drainage filters**
B	**relief wells**
C	**drain trenches**
D	**provision of downstream berms**
Correct Answer	**A**

Q.No: 91	**The flow of water after spilling over the weir crest in chute spillway respectively are**
A	**at right angle and parallel to weir crest**
B	**parallel and at right angle to weir crest**
C	**parallel to weir crest in both**
D	**at right angle to weir crest in both**
Question Deleted	

Q.No: 92	**Which of the following spillways is least suitable for an earthen dam ?**
A	**Ogee spillway**
B	**Chute spillway**

C	**Side channel spillway**
D	**Shaft spillway**
Correct Answer	**A**

Q.No: 93	**The discharge passing over an ogee spillway is given by (where, L is effective length of spillway crest and H is the total head over the spillway crest including velocity head.)**
A	**$CLH^{3/2}$**
B	**$CHL^{3/2}$**
C	**$CLH^{5/2}$**
D	**$CLH^{1/2}$**
Correct Answer	**A**

Q.No: 94	**Which of the following methods is used to estimate flood discharge based on high water marks left over in the past ?**
A	**slope-area method**
B	**area-velocity method**
C	**moving boat method**
D	**ultra-sonic method**
Correct Answer	**A**

Q.No: 95	**If the Froude number of a hydraulic jump is 5.50, it can be classified as**
A	**an oscillating jump**
B	**a weak jump**
C	**a strong jump**
D	**a steady jump**
Correct Answer	**D**

Q.No: 96	**In a Canal Syphon type Cross Drainage Work**
A	**canal bed is below the drain**
B	**canal bed is above the drain**
C	**canal bed and the drain at the same level**
D	**canal and the drain crossing at right angles**
Correct Answer	**A**

Q.No: 97	**For a discharge of 2.01 m^3/s and silt factor f=0.85 using Lacey's theory, the velocity is**

A	**0.467 m/s**
B	**2.567 m/s**
C	**4.667 m/s**
D	**6.777 m/s**
Correct Answer	**A**

Q.No: 98	**Water requirement for the crops is equal to**
A	**Consumptive use**
B	**Consumptive use + Application loss**
C	**Consumptive use + Application loss + Special needs for land preparation, transplantation**
D	**Consumptive use + Application loss + Surface runoff**
Correct Answer	**C**

Q.No: 99	**Gram crop has a Kor period of 18 days and Kor depth of 12 cm. The duty of the gram is**
A	**520 ha/cumec**
B	**790 ha/cumec**
C	**960 ha/cumec**
D	**1296 ha/cumec**
Correct Answer	**D**

Q.No: 100	**The permeability of an aquifer**
A	**increases with increase in temperature**
B	**increases with the decrease in temperature**
C	**is independent of temperature**
D	**decreases with the decrease in temperature**
Question Deleted	

State Engineering (Prelims) Exam – 2016

Second Paper – Second Shift

(Provisional Model Answer Key)

Electrical Engineering

Q.No: 1	**What will be the Fourier Transform of complex exponential signal $x(t)=e^{j\omega t}$?**
A	**An impulse function**
B	**A rectangular gate function**
C	**A train of impulse functions**
D	**A constant function**
Correct Answer	**A**

Q.No: 2	**Mathematical relation between unit impulse function $\delta(t)$ and step function $u(t)$ can be given by**
A	$u(t) = \int_{-\infty}^{t} u(\tau)d\tau$
B	$u(t) = \int_{-\infty}^{t} \delta(\tau)d\tau$
C	$u(t) = \delta(t)$
D	$u(t) = \frac{d\delta(t)}{dt}$
Correct Answer	**B**

Q.No: 3	**If G(ω) is the Fourier transform of g(t) then according to scaling property of the Fourier transform, the Fourier transform of g(at) is given by :**
A	**(1/|a|)G((ω/a))**
B	**|a| G(ωa)**
C	**a G(ωa)**
D	**G(ω/a)**
Correct Answer	**A**

Q.No: 4	**The convolution operation of two signals in time domain can be represented by the following operation in Z-transform domain**
A	**multiplication**

B	**Addition**
C	**Subtraction**
D	**Division**
Correct Answer	**A**

Q.No: 5	**The Nyquist frequency of the signal x(t)=cos(100 πt) + 100 sin(600πt) + cos(200 πt) is**
A	**100 Hz**
B	**600 Hz**
C	**400 Hz**
D	**200 Hz**
Correct Answer	**B**

Q.No: 6	**The nature of the Fourier Series coefficients are periodic then this means signal in time domain is**
A	**Continuous - time periodic signal**
B	**Continuous - time aperiodic signal**
C	**Discrete - time periodic signal**
D	**Discrete - time aperiodic signal**
Correct Answer	**C**

Q.No: 7	**The Fourier transform of a signal** $x(t) = \cos(\omega_0 t)$ **is given by**
A	$\pi[\delta(\omega - \omega_0) + \delta(\omega + \omega_0)]$
B	$\frac{\pi}{2}[\delta(\omega - \omega_0) + \delta(\omega + \omega_0)]$
C	$2\pi[\delta(\omega - \omega_0) + \delta(\omega + \omega_0)]$
D	$\pi[\delta(\omega - 2\omega_0) + \delta(\omega + 2\omega_0)]$
Correct Answer	**A**

Q.No: 8	**Inverse Fourier transform of a Sinc - function will be a**
A	**Rectangular Function**
B	**Signum Function**
C	**Impulse Function**
D	**Gaussian Function**
Correct Answer	**A**

Q.No: 9	**Which one of the following statement is true?**
A	**Transistor can be modelled as current controlled current source**
B	**Transistor can be modelled as current controlled voltage source**
C	**Transistor can be modelled as voltage controlled voltage source**
D	**Transistor can be modelled as voltage controlled current source**
Correct Answer	**A**

Q.No: 10	**The Poynting Vector ($\vec{P}$) in terms of electric field vector ($\vec{E}$) and magnetic field vector ($\vec{H}$) is given by**
A	$\vec{P} = \vec{E}.\vec{H}$
B	$\vec{P} = \frac{\vec{E}}{\vec{H}}$
C	$\vec{P} = \frac{\vec{H}}{\vec{E}}$
D	$\vec{P} = \vec{E} \times \vec{H}$
Correct Answer	**D**

Q.No: 11	**The transistor which is used for designing the digital circuits generally has to operate in**
A	**Active region**
B	**Breakdown region**
C	**Cutoff & Saturation region**
D	**All are correct**
Correct Answer	**C**

Q.No: 12	**At room temperature, the band gap of a silicon is as follows :**
A	**1.6 eV**
B	**1.1 eV**
C	**0.5 eV**
D	**1.3 eV**
Correct Answer	**B**

Q.No: 13	**The oscillator which uses a tapped coil in the LC circuit is known as**
A	**Colpitts Oscillator**
B	**Hartley Oscillator**

C	**Armstrong Oscillator**
D	**Pierce Oscillator**
Correct Answer	**B**

Q.No: 14	**The relation between electric field vector ($\vec{E}$) and magnetic field vector ($\vec{H}$) is given by**
A	$\frac{\vec{E}}{\vec{H}} = \sqrt{\frac{\mu_0}{\varepsilon_0}}$
B	$\frac{\vec{E}}{\vec{H}} = \sqrt{\mu_0 \varepsilon_0}$
C	$\frac{\vec{H}}{\vec{E}} = \sqrt{\mu_0 \varepsilon_0}$
D	$\frac{\vec{H}}{\vec{E}} = \sqrt{\frac{\mu_0}{\varepsilon_0}}$
Correct Answer	**A**

Q.No: 15	**The ratio of the velocity of a wave in free space with the velocity of the wave in the conduction medium is known as**
A	**Space Function**
B	**Refractive Index**
C	**Attenuation Factor**
D	**Poynting Vector**
Correct Answer	**B**

Q.No: 16	**NAND gate will have low output if two inputs are following**
A	**00**
B	**01**
C	**10**
D	**11**
Correct Answer	**D**

Q.No: 17	**A Schmitt trigger generates one of the following type of output waveform**
A	**Triangular**
B	**Rectangular**
C	**Trapezoidal**
D	**Sinusoidal**

Correct Answer	**B**

Q.No: 18	**For the conversation of parallel to series data, following device can be used:**
A	**Demultiplexer**
B	**Multiplexer**
C	**Decoder**
D	**Counter**
Correct Answer	**B**

Q.No: 19	**EX-OR gate can work as NOT gate for the following condition**
A	**If one input can be made equal to one**
B	**If one input can be made equal to zero**
C	**By connecting both inputs together**
D	**None of these are correct**
Correct Answer	**A**

Q.No: 20	**The length of instruction in 8085 micro processor is**
A	**32 bits**
B	**24 bits**
C	**8 bits**
D	**16 bits**
Question Deleted	

Q.No: 21	**Pirani gauge can be used to measure**
A	**Very high temperature**
B	**Very low pressure**
C	**Low fluid flow**
D	**High fluid flow**
Correct Answer	**B**

Q.No: 22	**Which one of the following statement is true?**
A	**In a capacitor, dielectric material between two plates reduces its capacitance**
B	**In a capacitor, dielectric material between two plates increases its capacitance**
C	**In a capacitor, dielectric material between two plates does not affect its capacitance**
D	**None of these are correct**

Correct Answer	**B**

Q.No: 23	**Varactor can be defined as**
A	**A diode which is used as a variable capacitor**
B	**A diode which is useful for high speed switching**
C	**A diode which is used as a variable inductor**
D	**A diode which is used as a variable resistor**
Correct Answer	**A**

Q.No: 24	**A PMMC based instrument can be used to measure**
A	**DC (Average) value**
B	**Maximum value**
C	**RMS(root mean square) value**
D	**All are correct**
Correct Answer	**A**

Q.No: 25	**The Boolean expression given by** $\bar{X}Y + X\bar{Y} + XY$ **is equivalent to**
A	$X + Y$
B	$\bar{X} + Y$
C	XY
D	$\overline{X + Y}$
Correct Answer	**A**

Q.No: 26	**If in a amplitude modulation (AM) based communication system P_c denotes the power of carrier and P_t denotes the total power of AM wave then for modulation index = 1, the relation between P_c and P_t will be**
A	**$P_c=P_t$**
B	**$P_c=P_t/2$**
C	**$P_t=P_c/4$**
D	**$P_t=3P_c/2$**
Correct Answer	**D**

Q.No: 27	**In communication system, the ergodic process concept for many random signal means**
A	**They have similar ensemble averages**
B	**They have similar time averages**

C	**They have similar time and ensemble averages**
D	**They do not have similar time and ensemble averages**
Correct Answer	**C**

Q.No: 28	**The frequency modulation (FM) based communication system has the following disadvantages over the amplitude modulation (AM) communication system:**
A	**requirement of more output power**
B	**requirement of more bandwidth**
C	**requirement of more modulating power**
D	**presence of noise in high frequency regions**
Correct Answer	**B**

Q.No: 29	**Sampling theorem is useful in following communication system**
A	**Pulse code Modulation (PCM)**
B	**Amplitude Modulation (AM)**
C	**Frequency Modulation (FM)**
D	**Phase Modulation (PM)**
Correct Answer	**A**

Q.No: 30	**Noise generally affects the following part of the communication system**
A	**Transmitter**
B	**Receiver**
C	**channel**
D	**None of these are correct**
Correct Answer	**C**

Q.No: 31	**The inverse Laplace transform of** $\frac{8}{s(s+2)}$ **is**
A	**$4(1 - e^{-2t})$**
B	**$4(1 + e^{-2t})$**
C	**$4(1 - e^{2t})$**
D	**$4(1 + e^{2t})$**
Correct Answer	**A**

Q.No: 32	**In control system, in order to represent multiple input and multiple output systems which technique is more suitable**

A	**Bode plots**
B	**State space models**
C	**Root locus methods**
D	**Nyquist plot**
Correct Answer	**B**

Q.No: 33	**The Laplace transform of a doublet can be given as**
A	**1/s**
B	**s**
C	**s^2**
D	**$1/s^2$**
Correct Answer	**B**

Q.No: 34	**Which one of the following statement is true**
A	**By introducing a negative feedback, both system stability and system gain increases**
B	**By introducing a negative feedback, system stability increases and system gain decreases**
C	**By introducing a negative feedback, system stability decreases and system gain increases**
D	**By introducing a negative feedback, system stability and system gain both decreases**
Correct Answer	**B**

Q.No: 35	**The transfer function of a system is given as** $\frac{3s+1}{s^2+s+1}$ **this system is**
A	**Unstable system**
B	**Stable system**
C	**Marginally stable system**
D	**None of these are correct**
Correct Answer	**B**

Q.No: 36	**Suppose a communication channel in the presence of additive white Gaussian noise has bandwidth 8KHz, and signal to noise ratio (SNR) = 7 then the channel capacity will be**
A	**32 Kbps**
B	**8 Kbps**
C	**24 Kbps**
D	**64 Kbps**
Correct Answer	**C**

Q.No: 37	**The pulse width Modulation process can be achieved by**
A	**Using free-running multivibrator**
B	**Performing integration on the signal**
C	**Using a mono-stable multivibrator**
D	**Performing a differentiation on pulse position modulation**
Correct Answer	**C**

Q.No: 38	**In frequency division multiplexing (FDM) receiver, in order to separate the channels, following is used.**
A	**Integrator**
B	**Differentiator**
C	**Band pass filters**
D	**AND gates**
Correct Answer	**C**

Q.No: 39	**A communication circuit resonates at frequency of 1 KHz and this circuit has Q factor Q = 10. What will be the bandwidth corresponding to half power points**
A	**100 Hz**
B	**10 Hz**
C	**1000 Hz**
D	**1 Hz**
Correct Answer	**A**

Q.No: 40	**Thermal noise power P in a resistor R is related as follows:**
A	**$P \propto R$**
B	**$P \propto 1/R$**
C	**$P \propto R^2$**
D	**P is independent of R**
Correct Answer	**D**

Q.No: 41	**The resistance for a conductor will be least for the following**
A	**DC**
B	**60 Hz**
C	**10 KHz**
D	**10 MHz**

Correct Answer	**A**

Q.No: 42	**The angle modulated signal given as $x(t) = 20 \cos(\omega_c t - 0.5 \cos(100t))$ has power**
A	**100**
B	**200**
C	**50**
D	**300**
Correct Answer	**B**

Q.No: 43	**Suppose P_K denotes the probability of a message then the amount of information denoted by I_K in bits can be given by**
A	**$I_K = -2 \log_2 P_K$**
B	**$I_K = - \log_2 P_K$**
C	**$I_K = -10 \log_2 P_K$**
D	**$I_K = 10 \log_2 P_K$**
Correct Answer	**B**

Q.No: 44	**The Z-transform of $\delta(n-p)$ is given by**
A	**Z^{-P}**
B	**Z^{P}**
C	**$Z^{-P/2}$**
D	**$Z^{-1/P}$**
Correct Answer	**A**

Q.No: 45	**Power spectral density of a signal x(t) is $S_x(f)$,then the power spectral density of it's Hilbert transformed signal will be**
A	**$-S_x(f)$**
B	**$S_x(f)$**
C	**$\pi S_x(f)/2$**
D	**$2\pi S_x(f)$**
Correct Answer	**B**

Q.No: 46	**Which one of the following statement is true: For modeling of ideal operational amplifier**
A	**Voltage controlled Current source**
B	**Voltage controlled Voltage source**

C	**Current controlled Current source**
D	**Current controlled Voltage source**
Correct Answer	**B**

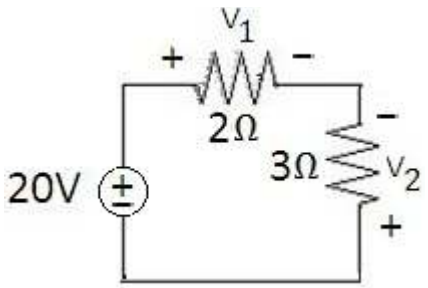
Q.No: 47	**Quantization noise is generated in the following:**
A	**Frequency division multiplexing**
B	**Time division multiplexing**
C	**Pulse code modulation**
D	**Amplitude modulation**
Correct Answer	**C**

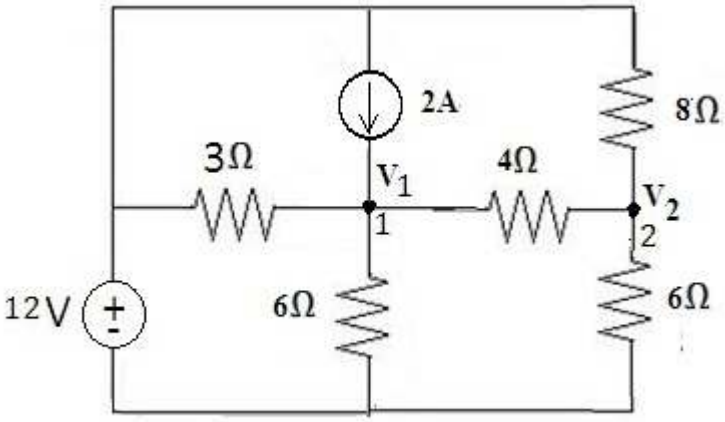
Q.No: 48	**Which is a circular polarized antenna?**
A	**Yagi-Uda**
B	**Parabolic reflector**
C	**Small circular loop**
D	**Helical**
Correct Answer	**D**

Q.No: 49	**In a waveguide, the wavelength of a wave is**
A	**Directly proportional to the group velocity**
B	**Greater than its value in free space**
C	**Dependent on the waveguide dimensions**
D	**Inversely proportional to the phase velocity**
Correct Answer	**B**

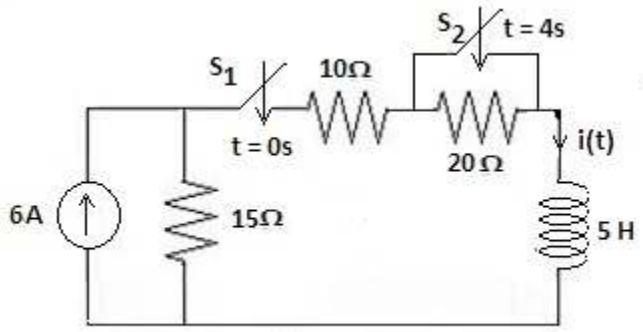
Q.No: 50	**Virtual ground is a ground for**
A	**Current and not for Voltage**
B	**Neither Current nor Voltage**
C	**Voltage and Current both**
D	**Voltage and not for Current**
Correct Answer	**D**

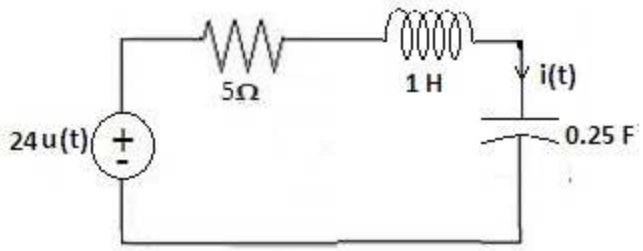
Q.No: 51	**For the circuit of below figure.The voltages V_1 & V_2 are**

	
A	**V_1 = 8V, V_2 = 12V**
B	**V_1 = 8V, V_2 = -12V**
C	**V_1 = -8V, V_2 = -12V**
D	**V_1 = -8V, V_2 = 12V**
Correct Answer	**B**

Q.No: 52	**In below figure, applying KCL at node 2 gives** 
A	$\frac{V_2-V_1}{4}+\frac{V_2}{8}=\frac{V_2}{6}$
B	$\frac{V_1-V_2}{4}+\frac{V_2}{8}=\frac{V_2}{6}$
C	$\frac{V_1-V_2}{4}+\frac{12-V_2}{8}=\frac{V_2}{6}$
D	$\frac{V_2-V_1}{4}+\frac{V_2-12}{8}=\frac{V_2}{6}$
Correct Answer	**C**

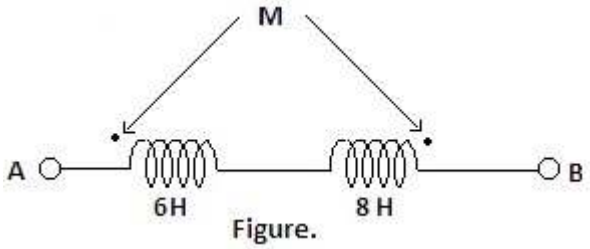
Q.No: 53	**Switch S_1 in figure below is closed at t=0 and switch S_2 is closed at t=4s. The current i(t) at t= ∞ is**

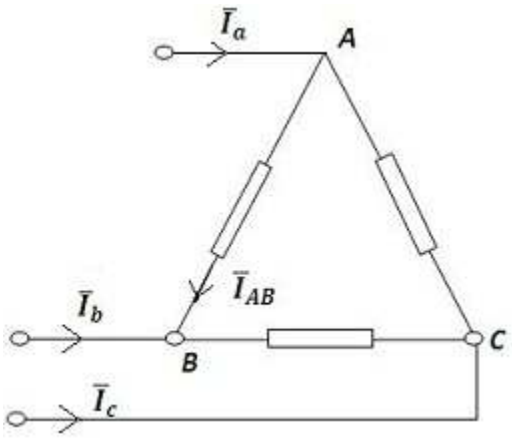
	 Figure.
A	**2.4 A**
B	**3.6 A**
C	**2.4 A**
D	**4.2 A**
Correct Answer	**B**

Q.No: 54	**For the series RLC circuit of below figure, the current i(t) will show**  Figure.
A	**Under damped response**
B	**Critically damped response**
C	**Over damped response**
D	**Un damped response**
Correct Answer	**C**

Q.No: 55	**If in a single phase AC circuit, v(t) = 120 sin(314 t + 45°) V & i(t) = 10 sin (314 t - 10°) A. The average power absorbed in the circuit is**
A	**300.5 W**
B	**491.4 W**
C	**344.2 W**
D	**982.9 W**
Correct Answer	**C**

Q.No: 56	**For the two coupled coils of figure below, the total inductance is 6H.The mutual inductance M between two coils is**

	 Figure.
A	**8 H**
B	**3 H**
C	**6 H**
D	**4 H**
Correct Answer	**D**

Q.No: 57	**For the balanced delta connected load as shown in figure below, the phase current** $\bar{I}_{AB}$ =13.2 ∠36.87° A. **Then the line current** $\bar{I}_b$ **is** 
A	$\bar{I}_b = 22.86 \angle 6.87$ A
B	$\bar{I}_b = 22.86 \angle 126.87°$ A
C	$\bar{I}_b = 22.86 \angle -113.13°$ A
D	$\bar{I}_b = 22.86 \angle -83.13°$ A
Correct Answer	**C**

Q.No: 58	**Given Y parameter of a two port network as** $[Y] = \begin{bmatrix} 0.3 & -0.2 \\ -0.2 & 0.3 \end{bmatrix}$ **The Z-parameter of the network** Z_{22} **is**
A	**5** Ω
B	**6** Ω
C	**4** Ω

D	**1.5 Ω**
Correct Answer	**B**

Q.No: 59	**Curie temperature is the temperature above which a ferromagnetic material becomes**
A	**Paramagnetic**
B	**Diamagnetic**
C	**Remains ferromagnetic**
D	**None of these are correct**
Correct Answer	**A**

Q.No: 60	**The dielectric losses occur in all solid and liquid dielectric due to**
A	**Conduction current**
B	**Hysteresis**
C	**Both Conduction current & Hysteresis**
D	**None of these are correct**
Correct Answer	**C**

Q.No: 61	**A 230V, 5A energy meter on full load unity power factor test makes 60 revolutions in 360 seconds. If the designed speed of the disc is 520 revolutions per KWh,the energy recorded by the meter is**
A	**115.10^{-3} KWh**
B	**115.185×10^{-3} KWh**
C	**115.385×10^{-3} KWh**
D	**115.68×10^{-3} KWh**
Correct Answer	**C**

Q.No: 62	**Two Watt meters can be used to measure power in a**
A	**Three phase four wire balanced load**
B	**Three phase four wire unbalanced load**
C	**Three phase three wire unbalanced load**
D	**All are correct**
Question Deleted	

Q.No: 63	**Under balanced condition of a bridge for measuring unknown impendence, if the detector is suddenly taken out**
A	**Measured value of impendence will be lower**

B	**Measured value of impendence will be higher**
C	**Measured value of impendence will not change**
D	**The impendence can not be measured**
Correct Answer	**C**

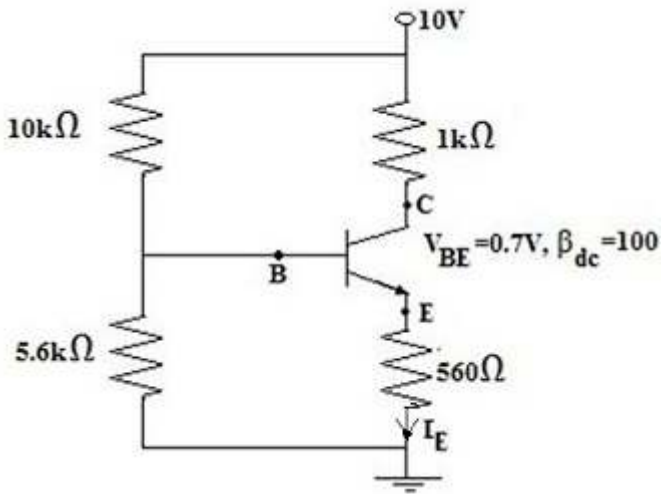
Q.No: 64	**In a spring-controlled moving iron instruments, the scale is**
A	**Uniform**
B	**Cramped at the lower end and expanded at the upper end**
C	**Expanded at the lower end and cramped at the upper end**
D	**Cramped both at the lower and the upper ends**
Correct Answer	**D**

Q.No: 65	**Which A/D converter has highest conversion time?**
A	**Flash type**
B	**Duel Slope integration**
C	**Successive approximation**
D	**Ramp/Counting**
Correct Answer	**B**

Q.No: 66	**The dynamic resistance can be important when a diode is**
A	**Reverse-biased**
B	**Forward-biased**
C	**In reverse breakdown**
D	**Unbiased**
Correct Answer	**B**

Q.No: 67	**A diode that has a negative resistance characteristic is the**
A	**Schottky diode**
B	**Tunnel diode**
C	**Laser diode**
D	**Hot-carrier diode**
Correct Answer	**B**

Q.No: 68	**For the circuit of figure below, which is a stiff voltage divider based transistor circuit, the emitter current I_E is**

	
A	**5.16 mA**
B	**5 mA**
C	**4.9 mA**
D	**4.96 mA**
Correct Answer	**C**

Q.No: 69	**A certain common emitter amplifier has a voltage gain of 100. If the emitter bypass capacitor is removed,**
A	**The circuit will become unstable**
B	**The voltage gain will decrease**
C	**The voltage gain will increase**
D	**The Q point will shift**
Correct Answer	**B**

Q.No: 70	**In the certain common mode operation of the differential amplifier,**
A	**Both inputs are grounded**
B	**The outputs are connected together**
C	**An identical signal appears on both inputs**
D	**The output signals are in phase**
Correct Answer	**C**

Q.No: 71	**A depletion MOSFET operates in**
A	**The depletion mode only**
B	**The enhancement mode only**
C	**The ohmic region only**
D	**Both the depletion and enhancement modes**

Correct Answer	**D**

Q.No: 72	**A certain inverting amplifier has a closed loop gain of 25. The op-amp has an open loop gain of 1,00,000. If another op-amp with an open loop gain of 2,00,000 is substituted in the configuration, the closed loop again**
A	**Doubles**
B	**Drops to 12.5**
C	**Remains at 25**
D	**Increases slightly**
Correct Answer	**C**

Q.No: 73	**The damping factor of an active filter is set by**
A	**The negative feedback circuit**
B	**The positive feedback circuit**
C	**The frequency selective circuit**
D	**The gain of the op-amp**
Correct Answer	**A**

Q.No: 74	**The 2's compliment of 11001000 is**
A	**00110111**
B	**00110001**
C	**01001000**
D	**00111000**
Correct Answer	**D**

Q.No: 75	**A 3-variable karnaugh map has**
A	**Eight cells**
B	**Three cells**
C	**Sixteen cells**
D	**Four cells**
Correct Answer	**A**

Q.No: 76	**To implement the expression** $\overline{A}BCD + A\overline{B}CD + AB\overline{C}\overline{D}$, **it takes one OR gate and**
A	**One AND gate**
B	**Three AND gate**
C	**Three AND gates and four inverters**

D	**Three AND gates and three inverters**
Correct Answer	**C**

Q.No: 77	**In general, a multiplexer has**
A	**One data input, several data outputs and selection inputs**
B	**One data input, one data output and one selection input**
C	**Several data inputs, several data outputs and selection inputs**
D	**Several data inputs, one data output and selection inputs**
Correct Answer	**D**

Q.No: 78	**Like the latch, the Flip-Flop belongs to a category of logic circuits known as**
A	**Monostable multivibrators**
B	**Bistable multivibrators**
C	**Astable multivibrators**
D	**One shots**
Correct Answer	**B**

Q.No: 79	**A modulus 12 counter must have**
A	**12-Flip-Flops**
B	**3-Flip-Flops**
C	**4-Flip-Flops**
D	**Synchronous clocking**
Correct Answer	**C**

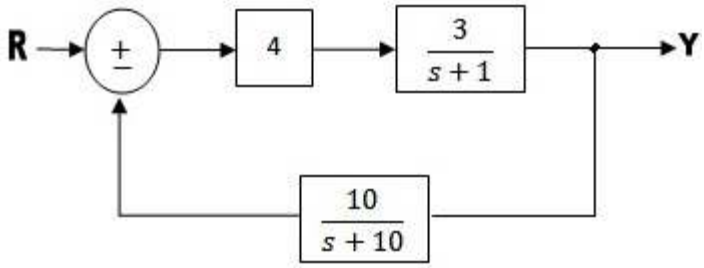
Q.No: 80	**The bit capacity of a memory that has 1024 addresses and can store 8 bits at each address is**
A	**1024**
B	**8192**
C	**8**
D	**4096**
Correct Answer	**B**

Q.No: 81	**In a 3-phase fully controlled bridge rectifier the firing pulse frequency is**
A	**3 times the line frequency**
B	**6 times the line frequency**
C	**9 times the line frequency**

D	**Same as line frequency**
Correct Answer	**B**

Q.No: 82	**In a step-down converter using pulse width modulation, T_{on} = 3 x 10^{-3}s and T_{off} = 1 x 10^{-3}s. The chopping frequency is**
A	**333 Hz**
B	**250 Hz**
C	**500 Hz**
D	**1000Hz**
Correct Answer	**B**

Q.No: 83	**A thyristor has internal power dissipation of 40W and is operated at an ambient temperature of 20°C. If thermal resistance is 1.6 °C/W, the junction temperature is**
A	**114 °C**
B	**64 °C**
C	**94 °C**
D	**84 °C**
Correct Answer	**D**

Q.No: 84	**The characteristic equation of the closed loop system of figure below is** 
A	**s^2+11s+10=0**
B	**s^2+11s+130=0**
C	**s^2+11s+120=0**
D	**s^2+10s+12=0**
Correct Answer	**B**

Q.No: 85	**The error function of a feedback system is** $E(s) = \frac{(S+0.1)(S+0.5)}{S(S+0.1)(S+0.5)+0.5(S+1)}$. **The steady state value of e(t) is**
A	**0.001**
B	**0.1**
C	**0.01**

D	**None of these are correct**
Correct Answer	**D**

Q.No: 86	**Closed loop transfer function of a unity feedback system is given by** $\frac{Y(s)}{R(s)} = \frac{\omega_n^2}{s^2+2\xi\omega_n s+\omega_n^2}$ **System k_v (velocity error constant) is**
A	$\frac{\omega_n}{2_\xi}$
B	1
C	∞
D	$\frac{2_\xi}{\omega_n}$
Correct Answer	**A**

Q.No: 87	**The transfer function of a lag compensator is** $D(s) = \frac{1+\alpha\tau s}{1+\tau s}\ ;\ \tau > 0$ **. The value of α is given by**
A	α **= 1**
B	α **> 1**
C	α **< 1**
D	α **is any constant**
Correct Answer	**B**

Q.No: 88	**A state variable formulation of a system is given by the equations** $\begin{bmatrix}\dot{x_1}\\ \dot{x_2}\end{bmatrix} = \begin{bmatrix}-1 & 0\\ 0 & -3\end{bmatrix}\begin{bmatrix}x_1\\ x_2\end{bmatrix} + \begin{bmatrix}1\\ 1\end{bmatrix}4$ $y=\begin{bmatrix}1 & 0\end{bmatrix}\begin{bmatrix}x_1\\ x_2\end{bmatrix}$ **The transfer function of the system is**
A	$\frac{1}{(s+1)(s+3)}$
B	$\frac{1}{s+1}$
C	$\frac{1}{s+3}$
D	**None of these are correct**
Correct Answer	**B**

Q.No: 89	**Let P_i = core loss and P_c = copper loss. A transformer has maximum efficiency when**
A	**$P_i = 2P_c$**
B	**$P_i = 1.5P_c$**
C	**$P_i = P_c$**
D	**$P_i = 0.5P_c$**
Correct Answer	**C**

Q.No: 90	**Pulsation loss in rotating machines occurs in**
A	**Pole body**
B	**Pole shoes**
C	**Yoke**
D	**Stator and rotor cores**
Correct Answer	**B**

Q.No: 91	**The armature reaction mmf in a DC machine is**
A	**Sinusoidal**
B	**Trapezoidal in shape**
C	**Rectangular in shape**
D	**Triangular in shape**
Correct Answer	**D**

Q.No: 92	**For a given torque, reducing the field turns of a DC series motor**
A	**Increases its speed demanding more armature current**
B	**Increases its speed but armature current remains the same**
C	**Decreases its speed demanding less armature current**
D	**Decreases its speed but armature current remains the same**
Correct Answer	**A**

Q.No: 93	**Synchronous motor speed is controlled by varying**
A	**Field execution**
B	**Supply voltage**
C	**Supply frequency only**
D	**Both (Supply voltage) and (Frequency)**
Correct Answer	**D**

Q.No: 94	**In a 3-phase induction machine at low slip, the torque slip characteristic is**
A	$T \propto \frac{1}{s^2}$
B	$T \propto s^2$
C	$T \propto \frac{1}{s}$
D	$T \propto s$
Correct Answer	**D**

Q.No: 95	**The power input to an induction motor is 40 kW when it is running at 5% slip. The stator resistance and core loss are assumed negligible. The torque developed is synchronous watts is**
A	**42 kW**
B	**40 kW**
C	**38 kW**
D	**2 kW**
Correct Answer	**B**

Q.No: 96	**The converter which can feed power in any one of the four quadrants is**
A	**Semi converter**
B	**Full converter**
C	**Dual converter**
D	**A combination of semi and full converter**
Correct Answer	**C**

Q.No: 97	**Circuit breakers usually operate under**
A	**Transient state of short circuit current**
B	**Sub-transient state of short circuit current**
C	**Steady state of short circuit current**
D	**After dc component has ceased**
Correct Answer	**A**

Q.No: 98	**Current in the primary writing of CT depends on**
A	**Burden in the secondary winding of a transformer**
B	**Load connected to the system in which CT is being used for measurement**

C	**Both burden on the secondary and load connected to a system**
D	**None of these are correct**
Correct Answer	**B**

Q.No: 99	**A synchronous condenser is**
A	**An induction motor**
B	**Under excited synchronous motor**
C	**Over excited synchronous motor**
D	**DC generator**
Correct Answer	**C**

Q.No: 100	**Power generation cost reduces as**
A	**Diversity factor increases and load factor decreases**
B	**Diversity factor decreases and load factor increases**
C	**Both diversity as well as load factor decreases**
D	**Both diversity as well as load factor increases**
Correct Answer	**D**

State Engineering (Prelims) Exam – 2016

Second Paper – Second Shift

(Provisional Model Answer Key)

Mechanical Engineering

Q.No: 1	**The equivalent bending moment under combined action of bending moment M and torque T is**
A	$\sqrt{M^2+T^2}$
B	$\frac{1}{2}\sqrt{M^2+T^2}$
C	$M+\sqrt{M^2+T^2}$
D	$\frac{1}{2}(M+\sqrt{M^2+T^2})$
Correct Answer	**D**

Q.No: 2	$\frac{PL^3}{3EI}$ **is the deflection under the load 'P' of a cantilever beam (Length 'L', Modulus of elasticity 'E' and Moment of inertia 'I'). The strain energy due to bending is**
A	$\frac{P^2L^3}{3EI}$
B	$\frac{P^2L^3}{6EI}$
C	$\frac{P^2L^3}{4EI}$
D	$\frac{P^2L^3}{48EI}$
Correct Answer	**B**

Q.No: 3	**The outside diameter of a hollow shaft is twice of it's inside diameter. The ratio of its torque carrying capacity of that of a solid shaft of the same material and same outside diameter is**
A	**15/16**
B	**3/4**
C	**1/2**
D	**1/16**
Correct Answer	**A**

Q.No: 4	**A square bar of side 4 cm and length 100 cm is subjected to axial load P. The same bar is then used as a cantilever beam and subjected to an end load P. The ratio of the strain energies, stored in the bar in the second case to that stored in first case, is**
A	**16**
B	**400**
C	**1000**
D	**2500**
Correct Answer	**D**

Q.No: 5	**Which theory of failure is applicable for copper components under steady load?**
A	**Principal stress theory**
B	**Strain energy theory**
C	**Maximum shear stress theory**
D	**Principal strain theory**
Correct Answer	**C**

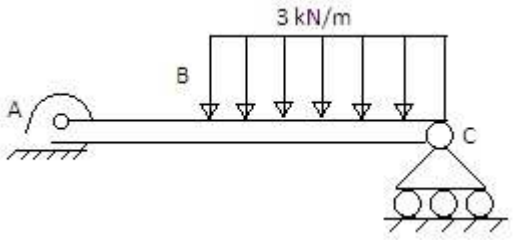
Q.No: 6	**The bucking load for a column one end fixed and other end free is 10kN. If both ends of this column is fixed, then what would be the buckling load capacity of this column ?**
A	**10 kN**
B	**20 kN**
C	**80 kN**
D	**160 kN**
Correct Answer	**D**

Q.No: 7	**In a laminated spring the strips are provided in different lengths for**
A	**Equal distribution of stress**
B	**Equal distribution of strain energy**
C	**Reduction in weight**
D	**All are correct**
Correct Answer	**A**

Q.No: 8	**Wire diameter, mean coil diameter and number of turns of a closely-coiled steel spring are d, D and N respectively and stiffness of the spring is K. A second spring is made of same steel but with wire diameter, mean coil diameter and number of turns 2d, 2D and 2N respectively. The stiffness of the new spring is**
A	**K**
B	**2K**

C	**4K**
D	**8K**
Correct Answer	**A**

Q.No: 9	**Hoop stress in a thin cylinder of a diameter 'd' and thickness 't' subjected to pressure 'P' will be**
A	$\frac{Pd}{4t}$
B	$\frac{Pd}{2t}$
C	$\frac{2Pd}{t}$
D	$\frac{Pd}{t}$
Correct Answer	**B**

Q.No: 10	**A mass less beam has a loading pattern as shown in Fig. The beam is of rectangular cross-section with a width of 30 mm and height of 100 mm**  **The maximum bending moment occurs at**
A	**Location B**
B	**2500 mm to the right of A**
C	**2675 mm to the right of A**
D	**3225 mm to the right of A**
Question Deleted	

Q.No: 11	**Instantaneous center of a body rolling with sliding on a stationary curved surface lies**
A	**At the point of contact**
B	**On the common tangent at the point of contact**
C	**On the common normal at the point of contact**
D	**None of these are correct**
Correct Answer	**C**

Q.No: 12	**When a slider moves with a velocity 'v' on a link rotating at an angular speed of 'ω' the coriolis component of acceleration is given by**
A	$\sqrt{2v/\omega}$
B	**vω**
C	**vω/2**
D	**2vω**
Correct Answer	**D**

Q.No: 13	**In spur gears, the circle on which the involute is generated is called**
A	**Pitch circle**
B	**Clearance circle**
C	**Base circle**
D	**Addendum circle**
Correct Answer	**C**

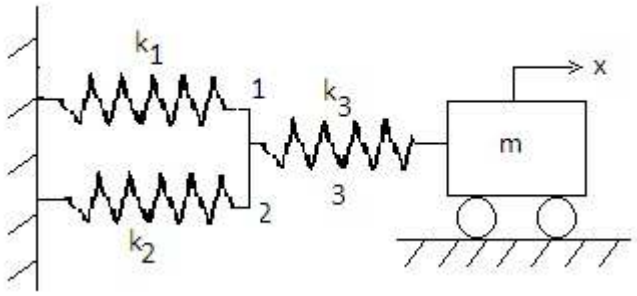
Q.No: 14	**In a simple gear train, if the number of idler gear is odd, then the direction of motion of driven gear will**
A	**be same as that of the driving gear**
B	**be opposite to the driving gear**
C	**depend upon the number of teeth on both gears**
D	**depend upon the size of the gears**
Correct Answer	**A**

Q.No: 15	**The choice of displacement diagram during the rise or return of a follower of a cam-follower mechanism is based on dynamic considerations. For high speed cam, follower will have which one of the following**
A	**Cycloidal motion**
B	**Simple harmonic motion**
C	**Parabolic or uniform acceleration motion**
D	**Uniform motion or constant velocity motion**
Correct Answer	**A**

Q.No: 16	**Which one of the following can completely balance several masses revolving in different planes on a shaft ?**
A	**A single mass in any one plane**
B	**A single mass in one of the planes of the revolving masses**
C	**Two masses in any two planes**
D	**Two equal masses in any planes**

Correct Answer	**C**

Q.No: 17	**The primary distributing force due to inertia of reciprocating parts of mass 'm' at radius 'r' rotating with an angular velocity 'ω' is given by**
A	**mω^2 r sin** θ
B	**mω^2 r cos** θ
C	**mω^2 r sin** $\left(\frac{2\theta}{n}\right)$
D	**mω^2 r cos** $\left(\frac{2\theta}{n}\right)$
Correct Answer	**B**

Q.No: 18	 **Which one of the following is the correct value of the natural frequency (ω_n) of the system given above ?**
A	$\left[\frac{1}{\left\{\frac{1}{(k_1+k_2)}+\frac{1}{k_3}\right\}m}\right]^{\frac{1}{2}}$
B	$\left(\frac{3k}{m}\right)^{\frac{1}{2}}$
C	$\left(\frac{k}{2m}\right)^{\frac{1}{2}}$
D	$\left[\frac{k_3+\left[\frac{1}{\frac{1}{k_1}+\frac{1}{k_2}}\right]}{m}\right]^{\frac{1}{2}}$
Correct Answer	**A**

Q.No: 19	**A shaft carries a weight 'w' at the centre. The CG of the weight is displaced by an amount 'e' from the axis of the rotation. If 'y' is the additional displacement of the CG from the axis of rotation due to the centrifugal force, then the ratio of 'y' to e (where 'ω_c' is the critical speed of shaft and ω is the angular speed of shaft) is given by**

A	$\frac{1}{\left[\frac{\omega_c}{\omega}\right]^2+1}$
B	$\frac{1}{\left[\frac{\omega_c}{\omega}\right]^2-1}$
C	$\left[\frac{\omega_c}{\omega}\right]^2+1$
D	$\left[\frac{\omega_c}{\omega}\right]^2-1$
Correct Answer	**B**

Q.No: 20	**The effect of gyroscopic couple on rolling of ships is**
A	**Very high**
B	**Very low**
C	**No effect**
D	**Moderate**
Correct Answer	**C**

Q.No: 21	**A transmission shaft subjected to bending loads must be designed on the basis of**
A	**Maximum shear stress theory**
B	**Fatigue strength**
C	**Maximum normal stress and maximum shear stress theories**
D	**Maximum normal stress theory**
Correct Answer	**D**

Q.No: 22	**The design calculations for members subject to fluctuating loads with the same factor of safety yield the most conservative estimates when using**
A	**Gerber relation**
B	**Soderberg relation**
C	**Goodman relation**
D	**None of these are correct**
Correct Answer	**B**

Q.No: 23	**Stress concentration in a machine component of ductile materials is not so harmful as it is in brittle materials because**
A	**In ductile materials local yielding may distribute stress concentration**
B	**Ductile materials have large Young's modulus**

C	**Poisson's ratio is larger in ductile materials**
D	**Modulus of rigidity is larger in ductile materials**
Correct Answer	**A**

Q.No: 24	**The power transmitted by a belt is dependent on the centrifugal effect in the belt . The maximum power can be transmitted when the centrifugal tension is**
A	**1/3 of the tension (T_1) on the tight side**
B	**1/3 of the total tension (T_t) on the tight side**
C	**1/3 of the tension (T_2) on the slack side**
D	**1/3 of the tension (T_1) and (T_2)**
Correct Answer	**B**

Q.No: 25	**The permissible stress in fillet weld is 100 N/mm^2 . The fillet weld has equal leg lengths of 15 mm each. The allowable shearing load on per cm length of the weld is**
A	**22.5 kN**
B	**15.0 kN**
C	**10.6 kN**
D	**7.5 kN**
Correct Answer	**C**

Q.No: 26	**The shearing area of a Key of length 'L' breadth 'b' depth 'h' is equal to**
A	**b X h**
B	**L X h**
C	**L X b**
D	$L \times \frac{h}{2}$
Correct Answer	**C**

Q.No: 27	**In the calculation of induced shear stress in the helical springs, the wahl's correction factor is used to take of**
A	**combined effect of transverse shear stress and bending stress in wire**
B	**combined effect of bending stress and curvature of wire**
C	**combined effect of transverse shear stress and curvature of wire**
D	**combined effect of torsional shear stress & transverse shear stress of wire**
Correct Answer	**C**

Q.No: 28	**Which sunk key is made from a segment of a circular disc of uniform thickness, known as**

A	**Feather key**
B	**Kennedy key**
C	**Woodruff key**
D	**Saddle key**
Correct Answer	**C**

Q.No: 29	**How can shock absorbing capacity of a bolt be increased**
A	**By tightening it properly**
B	**By increasing the shank diameter**
C	**By grinding the shank**
D	**By making the shank diameter equal to the core diameter of thread**
Correct Answer	**D**

Q.No: 30	**In a fillet welded joint, the weakest area of the weld is :**
A	**toe**
B	**throat**
C	**root**
D	**face**
Correct Answer	**B**

Q.No: 31	**The rake angle of a cutting tool is 10^{o},shear angle 35^{o} and cutting velocity 25 m/min. What is the chip velocity along tool face?**
A	**1.9 m/min**
B	**3.9 m/min**
C	**7.9 m/min**
D	**15.8 m/min**
Correct Answer	**D**

Q.No: 32	**In abrasive jet machining as the distance between nozzle tip and the work surface increases, the material removal rate**
A	**Increases continuously**
B	**Decreases continuously**
C	**Decreases, becomes stable & then increases**
D	**Increases, becomes stable & then decreases**
Correct Answer	**D**

Q.No: 33	**As tool and work are not in contact in EDM process**
A	**no relative motion occurs between them**
B	**no wear of tool occurs**
C	**no power is consumed during metal cutting**
D	**no force between tool and work occurs**
Correct Answer	**D**

Q.No: 34	**A 50 mm diameter disc is to be punched out from a carbon steel sheet 1.0 mm thick. The diameter of the punch should be**
A	**42.925 mm**
B	**50.00 mm**
C	**50.075 mm**
D	**None of these are correct**
Correct Answer	**D**

Q.No: 35	**3-2-1 method of location of jig or fixture would collectively restrict the work piece in 'n' degree of freedom, where the value of 'n' is**
A	**9**
B	**6**
C	**8**
D	**1**
Correct Answer	**A**

Q.No: 36	**Auto collimeter is used to check**
A	**Roughness**
B	**Flatness**
C	**Angle**
D	**Automobile balance**
Correct Answer	**C**

Q.No: 37	**On a triple start, thread screw**
A	**Lead = pitch**
B	**Lead = 3 x pitch**
C	**Lead = (1/2) x pitch**
D	**Lead = 9 x pitch**
Correct Answer	**B**

Q.No: 38	**The crater wear of a cutting tool is due to**
A	**Chemical action of the coolant**
B	**Excessive heat generated during cutting**
C	**Rubbing of tool against workplace**
D	**Abrasive action of the chip**
Correct Answer	**D**

Q.No: 39	**The primary tool force is used in calculating the total power consumption in machining is**
A	**radial force**
B	**tangential force**
C	**axial force**
D	**frictional force**
Correct Answer	**B**

Q.No: 40	**Which one of the following processes does not cause tool wear**
A	**Ultrasonic machining**
B	**Electro discharge machining**
C	**Laser beam machining**
D	**Anode mechanical machining**
Correct Answer	**C**

Q.No: 41	**In a tool life test, doubling the cutting speed reduces the tool life to $(1/8)^{th}$ of the original. The Taylor's tool life index is**
A	**1/3**
B	**1/2**
C	**1/4**
D	**1/8**
Correct Answer	**A**

Q.No: 42	**The standard time for an operation has been calculated as 10 minutes. The worker was rated at 80%. If the relaxation and other allowances were 25%, then the normal time would be**
A	**12.5 min**
B	**10 min**
C	**80 min**

D	**08 min**
Correct Answer	**D**

Q.No: 43	**An inventory control theory, the economic order quantity (EOQ) is**
A	**Average level of inventory**
B	**Optimum lot size**
C	**Lot size corresponding to break-even analysis**
D	**Capacity of a warehouse**
Correct Answer	**B**

Q.No: 44	**Which of the following method can be used for forecasting the sales potential of a new product**
A	**Direct survey method**
B	**Time series analysis**
C	**Jury executive opinion method**
D	**Sales force composite method**
Correct Answer	**A**

Q.No: 45	**Time estimates of an activity in a PERT network are:** **optimistic time t_o = 9 days,** **pessimistic time t_p = 21 days and most likely time t_m = 15 days** **The approximate probability of completion of this activity in 13 days**
A	**34%**
B	**50%**
C	**16%**
D	**84%**
Correct Answer	**C**

Q.No: 46	**In a queuing problem, if the arrivals are completely random, then the probability distribution of number of arrivals in a given time follows :**
A	**Poisson distribution**
B	**Normal distribution**
C	**Binomial distribution**
D	**Exponential distribution**
Correct Answer	**A**

Q.No: 47	**Which of the following is the measure of forecast error**

A	**Mean absolute deviation**
B	**Trend value**
C	**Moving average**
D	**Price fluctuation**
Correct Answer	**A**

Q.No: 48	**Which one of the following is not a technique under Predetermined motion time system(PMTS) ?**
A	**Work factor**
B	**Synthetic data**
C	**Stopwatch time study**
D	**MTM**
Correct Answer	**C**

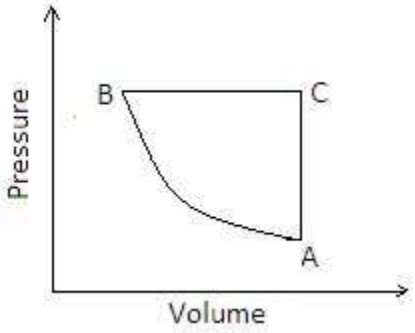
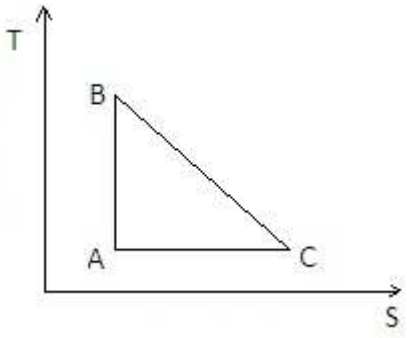
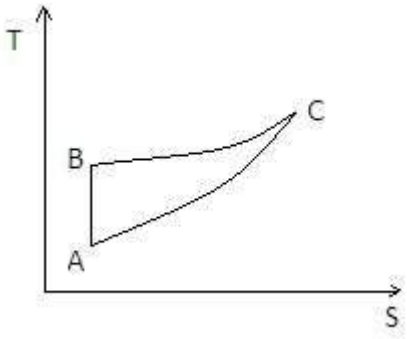
Q.No: 49	**If in a process on the shop floor, the specification are not met, but the charts for variables show control, then which of the following actions should be taken?**
A	**change the process**
B	**change the method of measurement**
C	**change the worker or provide him training**
D	**change the specifications or upgrade the process**
Correct Answer	**C**

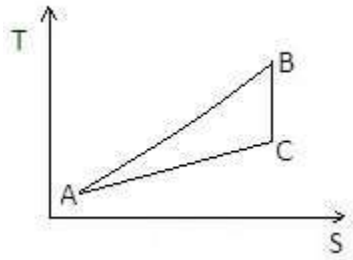
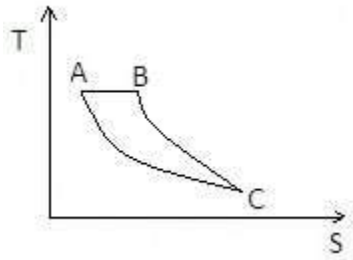
Q.No: 50	**An operating characteristic curve (OC curve) is a plot between**
A	**Consumer risk and producer risk**
B	**Probability of acceptance and probability of rejection**
C	**Percentage of defective and probability of acceptance**
D	**Average outgoing quality and probability of acceptance**
Correct Answer	**C**

Q.No: 51	**Joule-Thomson coefficient is defined as**
A	$\left(\frac{\partial T}{\partial P}\right)_h$
B	$\left(\frac{\partial H}{\partial P}\right)_T$
C	$\left(\frac{\partial H}{\partial T}\right)_p$

D	$\left(\frac{\partial P}{\partial T}\right)_h$
Correct Answer	**A**

Q.No: 52	**The internal energy of a certain system is a function of temperature alone and is given by the formula E = 25+0.25t kJ. If this system executes a process for which the work done by it per degree temperature increases is 0.75 kN-m,** $\frac{dE}{dt} = Q\text{-}W$, **the heat interaction per degree temperature increase, in kJ, is**
A	**-1.00**
B	**1.00**
C	**-0.50**
D	**0.50**
Correct Answer	**B**

Q.No: 53	**A cycle of pressure - volume diagram is shown in the figure**  **Same cycle on temperature - entropy diagram will be represented by**
A	
B	

C	
D	
Correct Answer	**B**

Q.No: 54	**When a system undergoes a process such that $\int \frac{dQ}{T} = 0$ and $\Delta S > 0$, the process is**
A	**isothermal**
B	**reversible adiabatic**
C	**irreversible adiabatic**
D	**isobaric**
Correct Answer	**C**

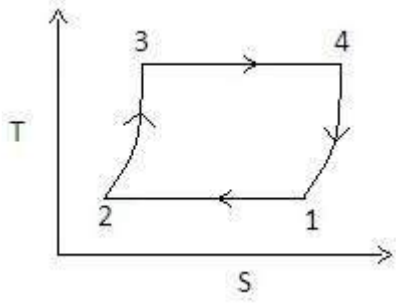
Q.No: 55	**A heat pump operating on Carnot cycle pumps heat from a reservoir at 300 K to a reservoir at 600 K. The coefficient of performance is**
A	**1.5**
B	**0.5**
C	**2**
D	**1.0**
Correct Answer	**C**

Q.No: 56	**The work done in compromising a gas isothermally is given by:**
A	$\frac{\gamma}{\gamma-1} P_1 V_1 \left[\left(\frac{P_2}{P_1} \right)^{\frac{\gamma-1}{\gamma}} - 1 \right]$
B	$mRT_1 \log_e \frac{P_2}{P_1}$

C	$mC_p(T_2 - T_1)$
D	$mRT_1(1 - \frac{T_2}{T_1})$
Correct Answer	**B**

Q.No: 57	**Consider the following statements** **1)Avaliability is the maximum theoretical work obtainable** **2)Clapeyron's equation for dry saturated steam is given by** $V_s - V_f = \frac{dT_s}{dP}\left(\frac{h_s - h_f}{T_s}\right)$ **3)A gas can have any temperature at a given pressure unlike a vapour, which has a fixed temperature at a given pressure.** $\mu = \left(\frac{\partial s}{\partial P}\right)_h$ **4)Joule Thomson coefficient is expressed as of these statements**
A	**1,2,3 are correct**
B	**1,3 and 4 are correct**
C	**2 and 3 are correct**
D	**1,2 and 4 are correct**
Correct Answer	**A**

Q.No: 58	**The heat absorbed or rejected during a polytropic process is equal to**
A	$\left(\frac{\Upsilon - n}{\Upsilon - 1}\right)^{1/2}$ x workdone
B	$\left(\frac{\Upsilon - n}{n - 1}\right)$ x workdone
C	$\left(\frac{\Upsilon - n}{\Upsilon - 1}\right)^{2}$ x workdone
D	$\left(\frac{\Upsilon - n}{\Upsilon - 1}\right)$ x workdone
Correct Answer	**D**

Q.No: 59	 **The thermo dynamic cycle shown above on the T-S diagram pertains to which one of the**

	following ?
A	**Stirling cycle**
B	**Ericsson cycle**
C	**Vapour compression**
D	**Brayton cycle**
Question Deleted	

Q.No: 60	**What is the loss of available energy associated with the transfer of 1000kJ of heat from a constant temperature system at 600K to another at 400K? When the environmental temperature is 300K?**
A	**140 kJ**
B	**250 kJ**
C	**166.67 kJ**
D	**180 kJ**
Correct Answer	**B**

Q.No: 61	**The depth of a fluid is measured in vertical Z-direction; X and Y are the other two directions and are mutually perpendicular. The static pressure variation in the fluid is given by (symbols have the usual meaning).**
A	$\frac{dp}{dz} = g$
B	$\frac{dp}{dz} = 0$
C	$\frac{dp}{dz} = \rho g$
D	$\frac{dp}{dz} = -\rho g$
Correct Answer	**D**

Q.No: 62	**Surface tension is due to**
A	**Cohesion**
B	**Viscous force**
C	**Adhesion**
D	**The difference between adhesive and cohesive force**
Correct Answer	**A**

Q.No: 63	**The density of a fluid is sensitive to changes is pressure. The fluid will be known as**
A	**Newtonian fluid**
B	**Perfect fluid**
C	**Compressible fluid**
D	**Real fluid**
Correct Answer	**C**

Q.No: 64	**Is it possible to pump water available at around 100^0C under atmospheric condition using centrifugal pump placed near the tank**
A	**No**
B	**Yes**
C	**Yes, if pump is selected properly**
D	**None of these are correct**
Correct Answer	**A**

Q.No: 65	**If the stream function is given by φ=3xy then the velocity at a point (2,3) will be**
A	**7.21 unit**
B	**10.82 unit**
C	**18 unit**
D	**54 unit**
Correct Answer	**B**

Q.No: 66	**Why are the surge tanks used in pipe line?**
A	**To reduce frictional loss in pipe**
B	**To ensure uniform flow in pipe**
C	**To relieve the pressure due to water hammer**
D	**To reduce cavitalion**
Correct Answer	**C**

Q.No: 67	**Consider the following statements in respect to Kaplan Turbine:** **1) It is a reaction turbine** **2) It is an impulse turbine** **3) It has adjustable blades**
A	**1, 2, and 3**
B	**2 and 3 only**
C	**1 and 2 only**

D	**1 and 3 only**
Correct Answer	**D**

Q.No: 68	**The degree of reaction of a turbine is defined as a ration of**
A	**Static pressure drop to total energy**
B	**Total energy transfer to static pressure drop**
C	**Change of velocity energy across the turbine to the total energy transfer**
D	**Velocity energy to pressure energy**
Correct Answer	**A**

Q.No: 69	**Eular number is defined as the ratio of inertia force to**
A	**Viscous force**
B	**Elastic force**
C	**Pressure force**
D	**Gravity force**
Correct Answer	**C**

Q.No: 70	**The vanes of a unfrifugal pump are generally**
A	**Radial**
B	**Curved backward**
C	**Curve forward**
D	**Twisted**
Correct Answer	**B**

Q.No: 71	**Heat transfer takes place according to**
A	**Zeroth law of thermodynamics**
B	**First law of thermodynamics**
C	**Second law of thermodynamics**
D	**Third law of thermodynamics**
Correct Answer	**C**

Q.No: 72	**It is desired to increase the heat dissipation rate over the surface of an electronic device of spherical shape of 5mm radius exposed to convection with h=10 W/m^2 K by encasing it in a spherical sheath of conductivity 0.04 W/mK. For maximum heat flow, the diameter of the sheath should be**
A	**18 mm**

B	**16 mm**
C	**12 mm**
D	**8 mm**
Correct Answer	**B**

Q.No: 73	**Heat is lost from a 100 mm diameter steam pipe placed horizontally in ambient at 30°C. If the Nusselt is 25 and thermal conductivity of air is 0.03 W/mK, then the heat transfer coefficient will be**
A	**7.5 W/m^{2}K**
B	**16.2 W/m^{2}K**
C	**25.2 W/m^{2}K**
D	**30 W/m^{2}K**
Correct Answer	**A**

Q.No: 74	**What is the expression for the thermal conduction resistance to heat transfer through a hollow sphere of inner radius r_1, and outer radius r_2, and thermal conductivity K?**
A	$\frac{(r_2 - r_1) r_1 r_2}{4\pi K}$
B	$\frac{4\pi K (r_2 - r_1)}{r_1 r_2}$
C	$\frac{r_2 - r_1}{4\pi K \; r_1 r_2}$
D	**None of these is correct**
Correct Answer	**C**

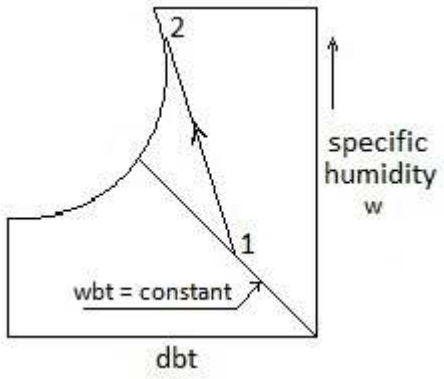
Q.No: 75	**For the radiation between two infinite parallel planes of emissivity ε_1 and ε_2 respectively, which one of the following is the expression for emissivity factor?**
A	$\varepsilon_1 \, \varepsilon_2$
B	$\frac{1}{\varepsilon_1} + \frac{1}{\varepsilon_2}$
C	$\frac{1}{\frac{1}{\varepsilon_1} + \frac{1}{\varepsilon_2}}$
D	$\frac{1}{\frac{1}{\varepsilon_1} + \frac{1}{\varepsilon_2} - 1}$

Correct Answer	**D**

Q.No: 76	**For simple vapour compression cycle, enthalpy at suction=1600 kJ/kg, enthalpy at discharge from the compressor =1800 kJ/kg, enthalpy at exit from condenser =600 kJ/kg. What is the COP for this refrigeration cycle?**
A	**3.3**
B	**5.0**
C	**4.0**
D	**4.5**
Correct Answer	**B**

Q.No: 77	**The leaks is a refrigeration system using freon are defected by**
A	**A halide torch, which on detection produces greenish flame lighting**
B	**Sulphur sticks, which on detection gives white smoke**
C	**Using reagents**
D	**Sensing reduction pressure**
Correct Answer	**A**

Q.No: 78	**What is the saturation temperature at the partial pressure of water vapour in the air water vapour mixture called?**
A	**Dry bulb temperature**
B	**Wet bulb temperature**
C	**Dew point temperature**
D	**Saturation temperature**
Correct Answer	**C**

Q.No: 79	 **Which one of the following statement is correct for a cooling and humidification process 1-2 as shown on the psychometric chart shown in figure?**
A	**wbt decreases in the process**
B	**The total enthalpy increases in the process**

C	**The total enthalpy remains constant in the process**
D	**It is an adiabatic saturation process**
Correct Answer	**B**

Q.No: 80	**A human body feels comfortable when the heat produced by the metabolism of human body is equal to**
A	**Heat dissipated to surroundings**
B	**Heat stored in the human body**
C	**Sum of Heat dissipated to surroundings and Heat stored in the human body**
D	**Difference of Heat dissipated to surroundings and Heat stored in the human body**
Correct Answer	**C**

Q.No: 81	**The order of values of thermal efficiency of Otto, Diesel and Dual cycle, when they have equal compression ratio and heat rejection, is given by**
A	$\eta_{Otto} > \eta_{Diesel} > \eta_{Dual}$
B	$\eta_{Diesel} > \eta_{Dual} > \eta_{Otto}$
C	$\eta_{Dual} > \eta_{Diesel} > \eta_{Otto}$
D	$\eta_{Otto} > \eta_{Dual} > \eta_{Diesel}$
Correct Answer	**D**

Q.No: 82	**The method of determination of indicated power of multi cylinder SI engine is given by the use of**
A	**Morse test**
B	**Prony break test**
C	**Prony heat test**
D	**Heat balance test**
Correct Answer	**A**

Q.No: 83	**In spark ignition engines knocking can be reduced by:**
A	**Increasing the compression ration**
B	**Increasing the cooling water temperature**
C	**Retarding the spark advance**
D	**Increasing the inlet air temperature**
Correct Answer	**C**

Q.No: 84	**Which of the following set of materials in most commonly used in catalytic converters for CI engines?**
A	**Platinum, Palladium and Rhodium**
B	**Palladium, Rhodium and Ruthenium**
C	**Rhodium , Ruthenium and Platinum**
D	**Ruthenium , Platinum and Palladium**
Correct Answer	**A**

Q.No: 85	**The three way catalytic converter cannot control which one of the following?**
A	**HC emission**
B	**CO emission**
C	**NO_x emission**
D	**PM emission**
Correct Answer	**D**

Q.No: 86	**In thermal power plants, the deaerator is used mainly to**
A	**Remove air from condenser**
B	**Increase firewater temperature**
C	**Reduce steam pressure**
D	**Remove dissolved gases from feed water**
Correct Answer	**D**

Q.No: 87	**The most commonly used moderator in nuclear power plants is**
A	**Heavy water**
B	**Concrete and bricks**
C	**Steel**
D	**Graphite**
Correct Answer	**D**

Q.No: 88	**The efficiency of a simple gas turbine can be improved by using a regenerator, because the**
A	**Work of compression is reduced**
B	**Heat required to be supplied is reduced**
C	**Work out put of the turbine is increased**
D	**Heat rejected is increased**
Correct Answer	**B**

Q.No: 89	**Given that** **N = speed, P=power, H=heat** **The specific speed of hydraulic turbine is given by**
A	$\frac{N\sqrt{P}}{H^{4/5}}$
B	$\frac{N\sqrt{P}}{H^{5/4}}$
C	$\frac{P\sqrt{N}}{H^{4/5}}$
D	$\frac{P\sqrt{N}}{H^{5/4}}$
Correct Answer	**B**

Q.No: 90	**In a two stage compressor with ideal inter cooling, for the work requirement to be minimum, the intermediate pressure Pi in terms of condenser and evaporator pressure Pc and Pe respectively is**
A	$Pi=Pc\ Pe$
B	$Pi=\sqrt{Pc\ Pe}$
C	$Pi=\sqrt{Pc/Pe}$
D	$Pi=Pc/Pe$
Correct Answer	**B**

Q.No: 91	**General description of CAD does not consist of**
A	**Implementation**
B	**Synthesis**
C	**Presentation**
D	**Optimization**
Correct Answer	**A**

Q.No: 92	**Volume of work produced in FMS environment is determined from**
A	**Number of machine used in the FMS**
B	**Kind of material handling equipment used in FMS**
C	**King of layout used in FMS**
D	**All are correct**

Correct Answer	**D**

Q.No: 93	**The axis movement of a robot may include**
A	**Elbow rotation**
B	**Wrist rotation**
C	**X-Y coordinate motion**
D	**Elbow, wrist and X-Y coordinate motion**
Correct Answer	**D**

Q.No: 94	**Which is one of the following not the output device?**
A	**Printer**
B	**Stylus**
C	**Display device**
D	**Plotter**
Correct Answer	**B**

Q.No: 95	**Machining time in NC and CNC machine tools is_____in comparison to conversional machine tool**
A	**More**
B	**Less**
C	**Unpredictable**
D	**Equal**
Correct Answer	**B**

Q.No: 96	**What is the purpose of satellite computers in Distributed Numerical Control machines?**
A	**To act as stand by systems**
B	**To share the processing of large size NC**
C	**To serve a group of NC machines**
D	**To network with another DNC setup**
Correct Answer	**B**

Q.No: 97	**In which machining system, the highest level of automation is found?**
A	**CNC machine tools**
B	**Automatic transfer machines**
C	**Machine tools with electro hydraulic positioning and control**
D	**DNC machining system**

Correct Answer	**C**

Q.No: 98	**Which one of the following has automatic tool changing unit and a component indexing device**
A	**Machining center**
B	**NC system**
C	**CNC system**
D	**DNC system**
Correct Answer	**A**

Q.No: 99	**Transfer machines can be defined as :**
A	**Material Processing machines**
B	**Material handling machines**
C	**Material Processing and Material handling machines**
D	**Components feeders for automatic assembly**
Correct Answer	**C**

Q.No: 100	**Punched tape is used in?**
A	**NC machine**
B	**CNC machine**
C	**NC and CNC both**
D	**DNC machine**
Correct Answer	**A**