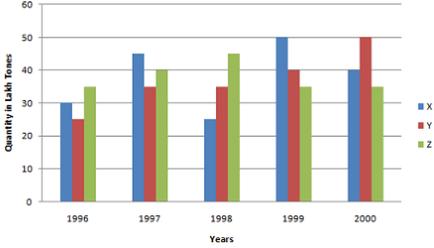
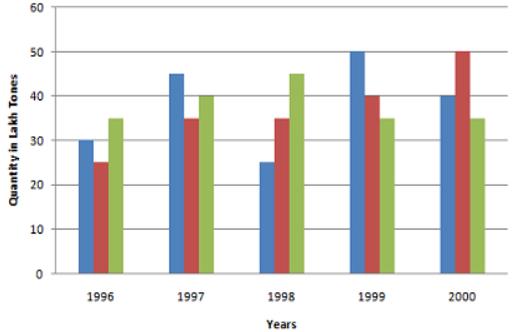


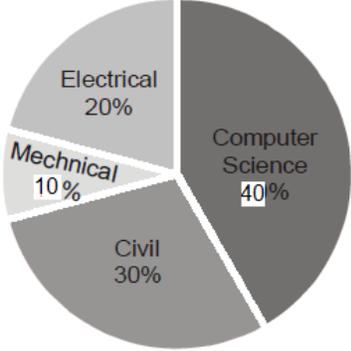
Advertisement no. CORP/GR.A/02/2021

Recruitment Exam for post of TO and STO for C-DAC, Silchar

Online Exam Date – 18th August 2021

Answer Key – Electronics/Embedded Stream

Question No.	Question	Correct Answer
<p>Q.1</p>	<p>Production of paper (in lakh tonnes) by three companies X, Y and Z over the years. Study the graph and answer the questions that follow.</p>  <p>What is the difference between the production of company Z in 1998 and company Y in 1996?</p> <p>A. 2,00,000 tons B. 20,00,000 tons C. 20,000 tons D. 2,00,00,000 tons</p>	<p>B</p>
<p>Q.2</p>	<p>Production of paper (in lakh tonnes) by three companies X, Y and Z over the years. Study the graph and answer the questions that follow.</p>  <p>What is the percentage increase in the production of company Y from 1996 to 1999?</p> <p>A. 30% B. 45% C. 50% D. 60%</p>	<p>D</p>

Question No.	Question	Correct Answer
Q.3	<p>The pie chart below has the breakup of the number of students, from different departments in an engineering college for the year 2012. The proportion of male to female students in each department is 5:4. There are 40 males in Electrical Engineering. What is the difference between the numbers of female students in the Civil department and the female students in the Mechanical department?</p>  <p>A. 32 B. 16 C. 48 D. 8</p>	A
Q.4	<p>A trader has 50 kg of rice, a part of which he sells at 14% profit and rest at 6% loss. On the whole his loss is 4%. What is the quantity sold at 14% profit and that at 6% loss?</p> <p>A. 5 and 45 kg B. 10 and 40 kg C. 15 and 35 kg D. 20 and 30 kg</p>	A
Q.5	<p>The cost price of two types of tea are Rs. 180 per kg and Rs. 200 per kg respectively. On mixing them in the ratio 5:3, the mixture is sold at Rs. 210 per kg. In the whole transaction, the gain percent is</p> <p>A. 10% B. 11% C. 12% D. 13%</p>	C
Q.6	<p>A batsman scored 110 runs which included 3 boundaries and 8 sixes. What percent of his total score did he make by running between the wickets?</p> <p>A. $45\frac{4}{11}\%$ B. $45\frac{5}{11}\%$ C. 45% D. $44\frac{5}{11}\%$</p>	B

Question No.	Question	Correct Answer
Q.7	<p>In how many ways can 8 Indians and, 4 American and 4 Englishmen can be seated in a row so that all person of the same nationality sit together?</p> <p>A. $3! 4! 8! 4!$ B. $3! 8!$ C. $4! 4!$ D. $8! 4! 4!$</p>	A
Q.8	<p>Simplify the following</p> $(a^{-3} b^{-2} / a^2 b^2)^{-3} * (a^3 b^{-4} / a^{-3} b^3) / (a^{-2} b^3 / a^{-4} b^{-3})$ <p>A. $a^{-19} b^{-1}$ B. $a^{-19} b$ C. $a^{19} b^{-1}$ D. $a^{19} b$</p>	C
Q.9	<p>The number of permutations of the letters of the word 'MESMERISE' is_</p> <p>A. $9! / (2!)^2 3!$ B. $9! / (2!)^3 3!$ C. $9! / (2!)^2 (3!)^2$ D. $8! / (2!)^2 (3!)^2$</p>	A
Q.10	<p>A question paper consists of five problems, each problem having three internal choices. In how many ways can a candidate attempt one or more problems?</p> <p>A. 63 B. 511 C. 1023 D. 15</p>	C
Q.11	<p>A group of 10 representatives is to be selected out of 12 seniors and 10 juniors. In how many different ways can the group be selected if it should have at least one senior?</p> <p>A. ${}^{22}C_{10}$ B. ${}^{22}C_{10} + 1$ C. ${}^{22}C_9 + {}^{10}C_1$ D. ${}^{22}C_{10} - 1$</p>	C
Q.12	<p>A bag contains 7 green and 8 white balls. If two balls are drawn simultaneously, the probability that both are of the same colour is –</p> <p>A. $8/15$ B. $11/15$ C. $7/15$ D. $3/5$</p>	C

Question No.	Question	Correct Answer
Q.13	<p>From a pack of cards two cards is drawn one after the other, with replacement. The probability that the first is a red card and the second is a king is -.</p> <p>A. $\frac{1}{26}$ B. $\frac{3}{52}$ C. $\frac{15}{26}$ D. $\frac{11}{26}$</p>	A
Q.14	<p>If South-East becomes North and South becomes North-East and all the rest directions are changed in the same manner, then what will be the direction for West?</p> <p>A. North-East B. North-West C. South-East D. South-West</p>	C
Q.15	<p>In a family there are several brothers and sisters. Every 2 boys have brothers as many as sisters and each girl has 2 brothers less than twice as many brothers as sisters. Now find the number of boys and girls.</p> <p>A. 8,6 B. 6,4 C. 6,8 D. 12,10</p>	A
Q.16	<p>The following question, two or three statements are given and after that two conclusions are provided. You have to take the statements to be true though it shows difference from the known facts. At first, read the statements and then go to the conclusions. Among the conclusions, decide which is logically correct and answer the question by choosing the options provided.</p> <p>Statements: Some cakes are toffees. All toffees are chocolates.</p> <p>Conclusions: I. Some chocolates are toffees. II. Some toffees are not cakes.</p> <p>A. Only Conclusion I is correct B. Only Conclusion II is correct C. Neither I nor II is correct D. Both I and II are correct</p>	A

Question No.	Question	Correct Answer
Q.17	<p>The following question, two or three statements are given and after that two conclusions are provided. You have to take the statements to be true though it shows difference from the known facts. At first, read the statements and then go to the conclusions. Among the conclusions, decide which is logically correct and answer the question by choosing the options provided.</p> <p>Statements: Some ellipses are eggs. No egg is hyperbola. All hyperbolas are parabola.</p> <p>Conclusions: I. There is a possibility that all eggs can be parabola. II. Some ellipse are definitely not hyperbola.</p> <p>A. Only Conclusion I is correct B. Only Conclusion II is correct C. Neither I nor II is correct D. Both I and II are correct</p>	D
Q.18	<p>The parameter of a square is equal to the perimeter of a rectangle of length 16 cm and breadth 14 cm. Find the circumference of a semicircle whose diameter is equal to the side of the square. (Round off your answer to two decimal places).</p> <p>A. 47.14 cm B. 23.57 cm C. 20.14 cm D. 84.92 cm</p>	B
Q.19	<p>If DELHI is coded as 73541 and CALCUTTA as 82589662, how can CALICUT be coded?</p> <p>A. 5279431 B. 5978213 C. 8251896 D. 8543691</p>	C
Q.20	<p>Six members of a family ABCDE and F are travelling together. B is the son of C but C is not the mother of B. A and C are married couple. E is the brother of C. D is the daughter of A. F is the brother of B. How many male members are there in the family?</p> <p>A. 4 B. 3 C. 2 D. 1</p>	A

Question No.	Question	Correct Answer
<p>Q.21</p>	<p>Which of the following options is the closest in the meaning to the word given below?</p> <p>Nadir</p> <p>A. Highest B. Lowest C. Medium D. Integration</p>	<p>B</p>
<p>Q.22</p>	<p>Choose the most appropriate word from the options given below to complete the following sentence:</p> <p>If we manage to our natural resources, we would leave a better planet for our children.</p> <p>A. Uphold B. Restrain C. Cherish D. Conserve</p>	<p>D</p>
<p>Q.23</p>	<p>Direction: In the following questions, a sentence has been given wherein a word/ group of words has been italicised. Some alternatives are suggested for the italicised words/ group of words which improves the sentences. In case no improvement is needed in the sentence, your answer is 'No improvement' or 'No correction required.'</p> <p>My mother <i>is ill since</i> two months.</p> <p>A. has been ill since B. has been ailing since C. has been ailing for D. no correction required</p>	<p>C</p>
<p>Q.24</p>	<p>The question below consists of a pair of related words followed by pairs of words. Select the pair that best expresses the relation in the original pair.</p> <p>Unemployed: Worker</p> <p>A. Fallow: Land B. Unaware: Sleeper C. Wit: Jester D. Renovated: House</p>	<p>A</p>

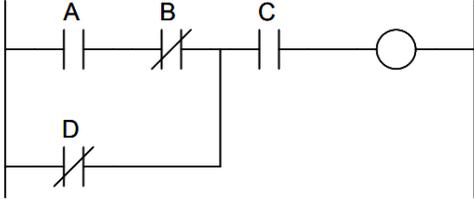
Question No.	Question	Correct Answer										
Q.25	<p>Choose the correct alternative which can be substituted for the below given word/ sentence.</p> <p>The life history of a person written by an author is called as _____</p> <p>A. Autobiography B. History C. Bibliography D. Biography</p>	D										
Q.26	<p>Rajeev failed in the examination because none of his answers were _____ to the questions asked.</p> <p>A. allusive B. revealing C. pertinent D. referential</p>	C										
Q.27	<p>Man who has committed such a _____ crime must get the most severe punishment.</p> <p>A. injurious B. uncharitable C. unworthy D. abominable</p>	D										
Q.28	<p>Choose the correct alternative which can be substituted for the below given word/sentence.</p> <p>A person who is bad in spellings is called as</p> <p>A. Calligraphist B. Cartographer C. Choreographer D. Cacographist</p>	D										
Q.29	<p>Match the columns.</p> <table border="1" data-bbox="651 1465 1292 1692"> <thead> <tr> <th>Column 1</th> <th>Column 2</th> </tr> </thead> <tbody> <tr> <td>(1) eradicate</td> <td>(P) misrepresent</td> </tr> <tr> <td>(2) distort</td> <td>(Q) soak completely</td> </tr> <tr> <td>(3) saturate</td> <td>(R) use</td> </tr> <tr> <td>(4) utilize</td> <td>(S) destroy utterly</td> </tr> </tbody> </table> <p>A. 1:S, 2:P, 3:Q, 4:R B. 1:P, 2:Q, 3:R, 4:S C. 1:Q, 2:R, 3:S, 4:P D. 1:S, 2:P, 3:R, 4:Q</p>	Column 1	Column 2	(1) eradicate	(P) misrepresent	(2) distort	(Q) soak completely	(3) saturate	(R) use	(4) utilize	(S) destroy utterly	A
Column 1	Column 2											
(1) eradicate	(P) misrepresent											
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Question No.	Question	Correct Answer
Q.30	<p>One who abandons his religious faith?</p> <p>A. Apostate B. Prostate C. Profane D. Agnostic</p>	A
Q.31	<p>2. Anna and Tania went shopping, but _____ couldn't find anything _____ liked.</p> <p>A. they, those B. they, them C. those, they D. they, they</p>	D
Q.32	<p>In the following questions, four alternatives are given for the Idiom/Phrase in bold in the sentence. Choose the alternative which best expresses the meaning of the Idiom/Phrase as your answer.</p> <p>I have clean hands, so why should I be afraid of any one</p> <p>A. faulty B. innocent C. hygienic D. beautiful</p>	B
Q.33	<p>In the following questions, four alternatives are given for the Idiom/Phrase in bold in the sentence. Choose the alternative which best expresses the meaning of the Idiom/Phrase as your answer.</p> <p>Life is an event of give and take</p> <p>A. make believe B. always C. giving D. adjustment</p>	D
Q.34	<p>In the following questions, four alternatives are given for the Idiom/Phrase in bold in the sentence. Choose the alternative which best expresses the meaning of the Idiom/Phrase as your answer.</p> <p>“Don't try to throw dust into my eyes. You will not succeed.”</p> <p>A. to protect my eyes B. blind me with dust C. to mislead or confuse me D. to blind me with dust</p>	C

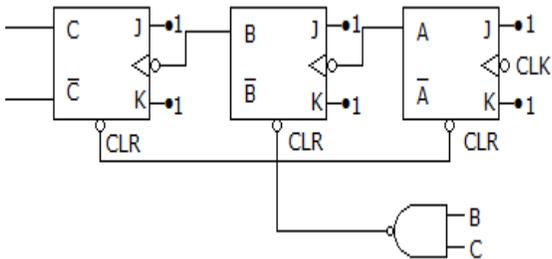
Question No.	Question	Correct Answer
Q.35	<p>Which functioning element of microcontroller generate and transmit the address of instructions to memory through internal bus?</p> <p>A. Instruction Decoding Unit B. Timing and Control Unit C. Program Counter D. Arithmetic Logic Unit</p>	C
Q.36	<p>How does the microcontroller communicate with the external peripherals / memory?</p> <p>A. via I/O ports B. via register arrays C. via memory D. all of the above</p>	A
Q.37	<p>Which among the below stated statements does not exhibit the characteristic feature of 16-bit microcontroller?</p> <p>A. Large program & data memory spaces B. High speed C. I/O Flexibility D. Limited Control Application</p>	D
Q.38	<p>Which microcontrollers offer the provisional and salient software features of fault handling capability, interrupt vector efficiency and versatile addressing?</p> <p>A. TMS 1000 (4 bit) B. TMS 7500 (8 bit) C. Intel 8096 (16 bit) D. Intel 80960 (32 bit)</p>	D
Q.39	<p>What is the major advantage of the R/2R ladder digital-to-analog (DAC), as compared to a binary-weighted digital-to-analog DAC converter?</p> <p>A. It has fewer parts for the same number of inputs. B. It only uses two different resistor values. C. The virtual ground is eliminated and the circuit is therefore easier to understand and troubleshoot. D. Its operation is much easier to analyze</p>	B
Q.40	<p>To construct a MOD 15 counters, the number of flip flop needed</p> <p>A. 15 B. 10 C. 2^{15} D. 4</p>	D

Question No.	Question	Correct Answer
Q.41	Which design considers both the hardware and software during the embedded design? A. Memory Design B. Software/ hardware codesign C. Platform-based design D. Peripheral design	B
Q.42	Which of the following can reduce the loop overhead and thus increase the speed? A. loop tiling B. Loop unrolling C. loop fusion D. loop permutation	B
Q.43	Which simulator/ debugger is capable of displaying output signal waveform resulting from stimuli applied to the inputs? A. VHDL emulator B. VHDL simulator C. VHDL locator D. VHDL debugger	B
Q.44	Which of the following can compute the exact number of clock cycles required to run an application? A. coarse-grained model B. layout model C. register-transaction model D. fine-grained model	D
Q.45	Which are the two modes of 80286? A. Mode1 and mode2 B. Mode A and mode B C. Real mode and protected mode D. Alternate and main	C
Q.46	Which of the following offers CPUs as integrated memory or peripheral interfaces? A. Microcontroller B. Microprocessor C. Embedded System D. Memory system	A

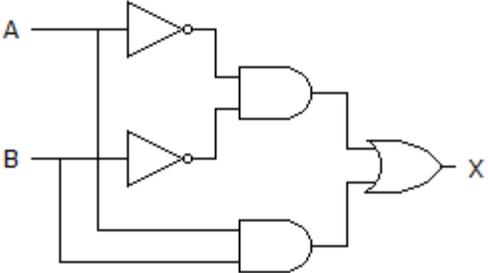
Question No.	Question	Correct Answer
Q.47	<p>How is the protection and security for an embedded system made?</p> <p>A. OTP B. IPR C. Memory disk security D. Security Chip</p>	B
Q.48	<p>Which of the following possesses a CISC architecture?</p> <p>A. MC68020 B. ARC C. Atmel AVR D. Blackfin</p>	A
Q.49	<p>What is 80/20 rule?</p> <p>A. 80% instruction is generated, and 20% instruction is executed. B. 80% instruction is executed and 20% instruction is generated. C. 80% instruction is executed and 20% instruction is not executed. D. 80% instruction is generated and 20% instruction is not generated.</p>	A
Q.50	<p>Arrange the different categories namely ASIP, SPP, GPP and PLD/FPGA of Embedded Systems in order of their increasing speed of operation and NRE cost.</p> <p>A. ASIP, SPP, GPP and PLD/FPGA B. GPP, SPP, PLD/FPGA and ASIP C. ASIP, GPP, SPP and PLD/FPGA D. GPP, ASIP, PLD/FPGA and SPP</p>	D
Q.51	<p>The control path of a single purpose processor can be optimized by</p> <p>A. Original program/ Algorithm B. FSM in FSMD C. The Data path D. Both a) and b)</p>	D
Q.52	<p>Which is the main programming unit in FPGA?</p> <p>A. Programmable AND Array B. Configurable Logic Block C. Programmable OR Array D. None of the above</p>	B
Q.53	<p>In FPGA, _____ provides interface between package pins and CLBs</p> <p>A. Input Output Blocks B. Functional Blocks C. Both a and b D. None of the a and b</p>	A

Question No.	Question	Correct Answer								
Q.54	<p>What is the Propagation delay?</p> <p>A. the time taken for the output of a gate to change after the intermediates have changed</p> <p>B. the time taken for the input of a gate to change after the intermediates have changed</p> <p>C. the time taken for the input of a gate to change after the outputs have changed</p> <p>D. the time taken for the output of a gate to change after the inputs have changed</p>	D								
Q.55	<p>Between coarse- and fine-grained FPGA blocks</p> <p>A. Coarse-grained ones require more area</p> <p>B. Coarse-grained ones can accommodate more logic</p> <p>C. Coarse-grained ones have more average fanouts</p> <p>D. All other options are valid</p>	D								
Q.56	<p>Identify the addressing modes of below instructions and match them:</p> <table border="1" data-bbox="594 873 1263 1035"> <tbody> <tr> <td>a. ADI</td> <td>1. Immediate addressing</td> </tr> <tr> <td>b. STA</td> <td>2. Direct addressing</td> </tr> <tr> <td>c. CMA</td> <td>3. Implied addressing</td> </tr> <tr> <td>d. SUB</td> <td>4. Register addressing</td> </tr> </tbody> </table> <p>A. a-1,b-2,c-3,d-4</p> <p>B. a-2,b-1,c-4,d-3</p> <p>C. a-3,b-2,c-1,d-4</p> <p>D. a-4,b-3,c-2,d-1</p>	a. ADI	1. Immediate addressing	b. STA	2. Direct addressing	c. CMA	3. Implied addressing	d. SUB	4. Register addressing	A
a. ADI	1. Immediate addressing									
b. STA	2. Direct addressing									
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Q.57	<p>The symbol -(L)- represent what instruction in the PLC language?</p> <p>A. OUT output unlatch instruction.</p> <p>B. OTL output latch instruction</p> <p>C. Examine off instruction.</p> <p>D. Output energize instruction</p>	B								
Q.58	<p>The Boolean representation of the following PLC program is:</p>  <p>A. $ABC + D$</p> <p>B. $C + (A + B)D$</p> <p>C. $ABC + BD$</p> <p>D. $C(AB + D)$</p>	D								

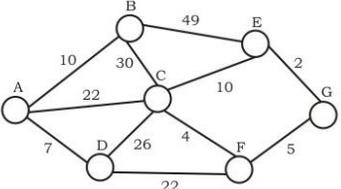
Question No.	Question	Correct Answer
Q.59	Process which permits to change the part of the device while the rest of an FPAA is still running is called: A. Dynamic Reconfiguration B. Static Reconfiguration C. Static installation D. Dynamic installation	A
Q.60	What will be the contents of register AL after the following has been executed MOV BL,8C MOV AL,7E ADD AL,BL A. 0A and carry flag is set B. 0A and carry flag is reset C. 6A and carry flag is set D. 6A and carry flag is reset	A
Q.61	Decimal 43 in hexadecimal and BCD number system is respectively..... and A. B2 and 01000011 B. 2B and 01000011 C. 2B and 00110100 D. B2 and 01000100	B
Q.62	A 12-bit ADC is used to convert analog voltage of 0 to 10 V into digital. The resolution is A. 2.44 mV B. 24.4 mV C. 1.2 V D. none of these	A
Q.63	A full adder can be made out of A. two half adders B. two half adders and a OR gate C. two half adders and a NOT gate D. three half adders	B
Q.64	Which device has one input and many outputs? A. Multiplexer B. Demultiplexer C. Counter D. Flip flop	B

Question No.	Question	Correct Answer
Q.65	<p>The counter in the given figure is</p>  <p>A. Mod 3 B. Mod 6 C. Mod 8 D. Mod 7</p>	B
Q.66	<p>The hexa-decimal equivalent to the binary number $(10110001101011.111100000110)_2$ is</p> <p>A. 2C5A.F05 B. 2C3B.F04 C. 2C6B.F06 D. 2AB6.F04</p>	C
Q.67	<p>The most common ADC seen in telecommunications based on audio signal is</p> <p>A. Flash ADC B. Successive approximation ADC C. Sigma-delta ADC D. Dual-slop ADC</p>	C
Q.68	<p>Consider the following statements and find which of these statement(s) are correct about analog-to-Digital convertor (ADCs):</p> <ol style="list-style-type: none"> Flash type ADCs are considered the fastest. In Successive approximation ADCs, conversion time depends upon the magnitude of the analog voltage. Counter-type ADCs work with fixed conversion time. Dual-slope ADCs are considered the lowest. <p>A. 2 and 3 only B. 2 and 4 only C. 1 and 4 only D. 1 and 3 only</p>	B
Q.69	<p>What is the analog output for a 4-bit R-2R ladder digital-to-analog convertor when input is $(1000)_2$ for $V_{ref} = 5V$.</p> <p>A. 2.3333 V B. 2.4444 V C. 2.5556 V D. 2.6667 V</p>	D

Question No.	Question	Correct Answer
Q.70	The resolution of 8-bit Digital-to-analog convertor(DAC) will be A. 1/255 B. 1/8 C. 1/128 D. 1/64	A
Q.71	When PN junction diode is forward bias, forward current is dominated by A. The diffusion current. B. The displacement current C. The drift current D. The drift or diffusion current	A
Q.72	In which type of power amplifier does the output current flow for the entire cycle of input signal A. Class C B. Class AB C. Class B D. Class A	A
Q.73	The crystal oscillator is a constant frequency oscillator due to A. Rigidity B. Vibrations C. Low Q D. High Q	D
Q.74	Which device is used for diagnostic purposes and for recording? A. Low pass filter B. Monolithic PLL C. Voltage Controlled Oscillator D. None of the mentioned	C
Q.75	Voltage to frequency conversion factor for Voltage Controlled Oscillator (VCO) is A. $Kv = \Delta Vc / \Delta fo$ B. $Kv = \Delta fo / \Delta Vc$ C. $Kv = \Delta fo \times \Delta Vc$ D. $Kv = 1 / (\Delta fo \times \Delta Vc)$	B
Q.76	Find the equation for change in frequency of Voltage Controlled Oscillator (VCO)? A. $\Delta fo = (2 \times \Delta Vc) / (RT \times CT \times Vcc)$ B. $\Delta fo = \Delta Vc / (4 \times RT \times CT \times Vcc)$ C. $\Delta fo = \Delta Vc / (2 \times RT \times CT \times Vcc)$ D. $\Delta fo = (4 \times \Delta Vc) / (RT \times CT \times Vcc)$	A

Question No.	Question	Correct Answer
Q.77	<p>What type of logic circuit is represented by the figure shown below?</p>  <p>A. XOR B. XNOR C. AND D. XAND</p>	B
Q.78	<p>A basic S-R flip-flop can be constructed by cross-coupling of which basic logic gates?</p> <p>A. AND or OR gates B. XOR or XNOR gates C. NOR or NAND gates D. AND or NOR gates</p>	C
Q.79	<p>The logic circuits whose outputs at any instant of time depends only on the present input but also on the past outputs are called _____</p> <p>A. Combinational circuits B. Sequential circuits C. Latches D. Flip-flops</p>	B
Q.80	<p>What is the maximum possible range of bit-count specifically in n-bit binary counter consisting of 'n' number of flip-flops?</p> <p>A. 0 to 2^n B. 0 to $2^n + 1$ C. 0 to $2^n - 1$ D. 0 to $2^{n+1/2}$</p>	C
Q.81	<p>The number of 1's present in the binary representation of $(10 \times 256 + 5 \times 16 + 5)_{10}$</p> <p>A. 5 B. 6 C. 7 D. 8</p>	B

Question No.	Question	Correct Answer								
Q.82	<p>A J-K flip-flop with J = 1 and K = 1 has a 20 kHz clock input. The Q output is _____.</p> <p>A. constantly LOW B. constantly HIGH C. a 20 kHz square wave D. a 10 kHz square wave</p>	D								
Q.83	<p>Synchronous counters eliminate the delay problems encountered with asynchronous counters because the:</p> <p>A. input clock pulses are applied only to the first and last stages B. input clock pulses are applied only to the last stage C. input clock pulses are not used to activate any of the counter stages D. input clock pulses are applied simultaneously to each stage</p>	D								
Q.84	<p>The characteristic equation for T flip flop is</p> <p>A. $Q_{n+1} = DQ_n$ B. $Q_{n+1} = \bar{D}Q_n$ C. $Q_{n+1} = \bar{Q}_n \oplus D$ D. $Q_{n+1} = D$</p>	D								
Q.85	<p>Which of the following algorithms is NOT a divide & conquer algorithm by nature?</p> <p>A. Binary Search B. Quicksort C. Merge Sort D. Heapsort</p>	D								
Q.86	<p>Assume that a Binary search algorithm in the worst case takes 30 seconds to search an element (say x) for an input of size 64. Which of the following most closely approximates the maximum input size of a problem that can be solved in 100 seconds?</p> <p>A. 2048 B. 2^{18} C. 2^{19} D. 2^{20}</p>	D								
Q.87	<p>Consider the following array:</p> <table border="1" data-bbox="365 1522 954 1570"> <tr> <td>23</td> <td>32</td> <td>45</td> <td>69</td> <td>72</td> <td>73</td> <td>89</td> <td>97</td> </tr> </table> <p>which algorithm out of the following options uses the least number of comparisons (among the array elements) to sort the above array in ascending order?</p> <p>A. Selection sort B. Insertion sort C. Mergesort D. Quicksort using the last element as pivot</p>	23	32	45	69	72	73	89	97	B
23	32	45	69	72	73	89	97			

Question No.	Question	Correct Answer
Q.88	<p>In what tree, for every node the height of its left sub tree and right sub tree differ at least by one:</p> <p>A. Binary search tree B. AVL tree C. Threaded binary tree D. Complete tree</p>	B
Q.89	<p>Which traversal technique list the nodes of a binary search tree in ascending order?</p> <p>A. Post-order B. Pre-order C. In-Order D. Linear order</p>	C
Q.90	<p>Which of the sorting algorithm have same best, average and worst-case time complexity?</p> <p>A. Insertion sort B. Bubble sort C. Quick sort D. Merge sort</p>	D
Q.91	<p>What is the most appropriate data structure to implement a priority queue?</p> <p>A. Heap B. Circular queue C. linked list D. Binary tree</p>	A
Q.92	<p>Which of the following standard algorithms is not a Greedy algorithm?</p> <p>A. Dijkstra's shortest path algorithm B. Prim's algorithm C. Huffman Coding D. Bellmen Ford Shortest path algorithm</p>	D
Q.93	<p>Consider the undirected graph below using Prim's algorithm to construct a minimum spanning tree starting with node A, which one of the following sequences of edges represents a possible order in which the edges would be added to construct the minimum spanning tree</p> 	D

Question No.	Question	Correct Answer																				
	A. (E, G), (C, F), (F, G), (A, D), (A, B), (A, C) B. (A, D), (A, B), (A, C), (C, F), (G, E), (F, G) C. (A, B), (A, D), (D, F), (F, G), (G, E), (F, C) D. (A, D), (A, B), (D, F), (F, C), (F, G), (G, E)																					
Q.94	We use dynamic programming approach when A. We need an optimal solution B. The solution has optimal substructure C. The given problem can be reduced to the 3-SAT problem D. It's faster than Greedy	B																				
Q.95	What happens when a top-down approach of dynamic programming is applied to any problem? A. It increases both, the time complexity and the space complexity B. It increases the space complexity and decreases the time complexity. C. It increases the time complexity and decreases the space complexity. D. It decreases both, the time complexity and the space complexity	B																				
Q.96	A hash table of length 10 uses open addressing with hash function $h(k)=k \bmod 10$, and linear probing. After inserting 6 values into an empty hash table, the table is as shown below. <table border="1" data-bbox="371 1192 513 1499"> <tbody> <tr><td>0</td><td></td></tr> <tr><td>1</td><td></td></tr> <tr><td>2</td><td>42</td></tr> <tr><td>3</td><td>23</td></tr> <tr><td>4</td><td>34</td></tr> <tr><td>5</td><td>52</td></tr> <tr><td>6</td><td>46</td></tr> <tr><td>7</td><td>33</td></tr> <tr><td>8</td><td></td></tr> <tr><td>9</td><td></td></tr> </tbody> </table> Which one of the following choices gives a possible order in which the key values could have been inserted in the table? A. 46, 42, 34, 52, 23, 33 B. 34, 42, 23, 52, 33, 46 C. 46, 34, 42, 23, 52, 33 D. 42, 46, 33, 23, 34, 52	0		1		2	42	3	23	4	34	5	52	6	46	7	33	8		9		C
0																						
1																						
2	42																					
3	23																					
4	34																					
5	52																					
6	46																					
7	33																					
8																						
9																						

Question No.	Question	Correct Answer
Q.97	<p>A hash function h defined $h(\text{key}) = \text{key} \bmod 7$, with linear probing, is used to insert the keys 44, 45, 79, 55, 91, 18, 63 into a table indexed from 0 to 6. What will be the location of key 18?</p> <p>A. 3 B. 4 C. 5 D. 6</p>	C
Q.98	<p>Let $w(n)$ and $A(n)$ denote respectively, the worst case and average case running time of an algorithm executed on an input of size n. which of the following is ALWAYS TRUE?</p> <p>A. $A(n) = \Omega(w(n))$ B. $A(n) = \Theta(w(n))$ C. $A(n) = O(w(n))$ D. $A(n) = o(w(n))$</p>	C
Q.99	<p>For problems X and Y, Y is NP-complete and X reduces to Y in polynomial time. Which of the following is TRUE?</p> <p>A. If X can be solved in polynomial time, then so can Y B. X is NP-complete C. X is NP-hard D. X is in NP, but not necessarily NP-complete</p>	D
Q.100	<p>Let S be an NP-complete problem and Q and R be two other problems not known to be in NP. Q is polynomial time reducible to S and S is polynomial-time reducible to R. Which one of the following statements is true?</p> <p>A. R is NP-complete B. R is NP-hard C. Q is NP-complete D. Q is NP-hard</p>	B