

122/2017

Question Booklet
Alpha Code

A

Question Booklet
Serial Number

Total Number of Questions : 100

Time : 75 Minutes

Maximum Marks : 100

INSTRUCTIONS TO CANDIDATES

1. The question paper will be given in the form of a Question Booklet. There will be four versions of question booklets with question booklet alpha code viz. A, B, C & D.
2. The Question Booklet Alpha Code will be printed on the top left margin of the facing sheet of the question booklet.
3. The Question Booklet Alpha Code allotted to you will be noted in your seating position in the Examination Hall.
4. If you get a question booklet where the alpha code does not match to the allotted alpha code in the seating position, please draw the attention of the Invigilator IMMEDIATELY.
5. The Question Booklet Serial Number is printed on the top right margin of the facing sheet. If your question booklet is un-numbered, please get it replaced by new question booklet with same alpha code.
6. The question booklet will be sealed at the middle of the right margin. Candidate should not open the question booklet, until the indication is given to start answering.
7. Immediately after the commencement of the examination, the candidate should check that the question booklet supplied to him contains all the 100 questions in serial order. The question booklet does not have unprinted or torn or missing pages and if so he/she should bring it to the notice of the Invigilator and get it replaced by a complete booklet with same alpha code. This is most important.
8. A blank sheet of paper is attached to the question booklet. This may be used for rough work.
9. **Please read carefully all the instructions on the reverse of the Answer Sheet before marking your answers.**
10. Each question is provided with four choices (A), (B), (C) and (D) having one correct answer. Choose the correct answer and darken the bubble corresponding to the question number using Blue or Black Ball Point Pen in the OMR Answer Sheet.
11. **Each correct answer carries 1 mark and for each wrong answer 1/3 mark will be deducted. No negative mark for unattended questions.**
12. No candidate will be allowed to leave the examination hall till the end of the session and without handing over his/her Answer Sheet to the Invigilator. Candidates should ensure that the Invigilator has verified all the entries in the Register Number Coding Sheet and that the Invigilator has affixed his/her signature in the space provided.
13. Strict compliance of instructions is essential. Any malpractice or attempt to commit any kind of malpractice in the Examination will result in the disqualification of the candidate.

122/2017

1. Athma Bodhodaya Sangam was founded by :
(A) Poykayil Yohannan (B) Shubanand Gurudevan
(C) Kumaranasan (D) Pambadi John Joseph
2. The venue of Salt Sathyagraha in Kerala was :
(A) Alapuzha (B) Kannur (C) Kozhikode (D) Neendakara
3. K.A. Keraleeyans name is associated with :
(A) Karshakasangham (B) Kayyur revolt
(C) Malabar Rebellion (D) Morazha revolt
4. Herman Gundert belonged to which of the following missionary group ?
(A) L.M.S. (B) C.M.S. (C) Basel mission (D) Salvation Army
5. Travancore State Congress formed in :
(A) 1931 (B) 1933 (C) 1936 (D) 1938
6. The chairman of Law Commission in India is :
(A) Justice K. Narayana Kurup (B) Justice Balbir Singh Chauhan
(C) Justice Deepak Misra (D) Justice J.B. Koshy
7. Who is the director of the film Valia Chirakulla Pakshi ?
(A) Dr. Biju (B) Anvar Rasheed (C) Dilesh Pothan (D) Martin Prakat
8. The oldest National Park in India is :
(A) Periyar National Park (B) Gim Corbet National Park
(C) Ranthambore National Park (D) Kaziranga National Park
9. Kundara Proclamation was in the year :
(A) 1801 (B) 1805 (C) 1807 (D) 1809
10. The headquarters of ASEAN is :
(A) Bangkok (B) Maldives (C) Jakarta (D) Nepal

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{P.T.O.}

11. Sawhrida Jadhva associated with Paliyam Sathyagraha was led by :
(A) K. Devayani (B) K.K. Kausalya
(C) Akkama Cheriyan (D) Sarada Ammal
12. The person who is known as Swami Vivekananda of Kerala :
(A) Arattu puzha Velayuda Panikkar
(B) T.K. Madhavan
(C) Agamananda Swamikal
(D) Kumbalath Sanku Pillai
13. The southernmost river in Kerala :
(A) Neyyar (B) Kallar (C) Pambar (D) Korapuzha
14. The venue of 2020 Olympics is :
(A) Tokyo (B) Qatar (C) China (D) Argentina
15. The President of Kerala Sahithya Academy is :
(A) C. Radhakrishnan (B) Sethu
(C) Khadeeja Mumtas (D) Vyasahkhan
16. Wagon Tragedy is associated with :
(A) Malabar Rebellion (B) Mappila Revolt
(C) Punnapra Wayalar Upheaval (D) Quit India Movement
17. Who was the Chief Guest of the 67th Republic Parade ?
(A) Barak Obama (B) Francois Hollande
(C) Teresa May (D) Angala Merkar
18. The scientific advisor of Chief Minister of Kerala :
(A) G. Madhavan Nair (B) Radhakrishnan Nair
(C) M.C. Dattan (D) M.G.K. Menon
19. India bought Raphel war Planes from which of the following country ?
(A) France (B) Israel (C) America (D) Germany

20. Kerala Kala Mandalam started in the year :
 (A) 1928 (B) 1930 (C) 1932 (D) 1935
21. The rate of increase of pressure in liquid column towards vertically downward direction must be equal to the _____ of the fluid at that point.
 (A) Specific volume (B) Specific weight
 (C) Specific gravity (D) None of the above
22. According to Pascals law, "The intensity of pressure at any point in a liquid at rest, is _____ in all directions".
 (A) the same (B) half (C) one third (D) double
23. U - Tube manometers are used to measure _____ of the liquid flowing through a pipe.
 (A) discharge (B) velocity (C) density (D) pressure
24. Which of the following device is used to measure the discharge through open channel ?
 (A) Venturimeter (B) Orifice meter (C) Notches (D) Piezometer
25. The co-efficient of discharge (cd) of a venturimeter lies between the limits :
 (A) 0.95 to 0.99 (B) 0.90 to 0.95 (C) 0.85 to 0.90 (D) 0.60 to 0.66
26. In an open channel flow, If the flow characteristics, such as, velocity of flow, depth of flow, rate of flow at any point do not change with respect to time, the flow is said to be _____.
 (A) Laminar flow (B) Uniform flow (C) Steady flow (D) Turbulent flow
27. In a Centrifugal pump, the sum of Suction head and Delivery head is called :
 (A) Total head (B) Pressure head
 (C) Manometric head (D) Static head
28. Following is an example of roto dynamic pump :
 (A) Reciprocating pump (B) Centrifugal pump
 (C) Gear pump (D) Lobe pump
29. A Kaplan turbine is a _____.
 (A) High speed Axial flow turbine (B) High head Mixed flow turbine
 (C) Low head Axial flow turbine (D) An Inward flow impulse turbine

30. In a reciprocating pump, If Q_t = Theoretical discharge and Q_a = Actual discharge, then the ratio $\frac{Q_t - Q_a}{Q_t}$ is known as :
- (A) Mechanical efficiency (B) Coefficient of discharge
(C) Slip (D) Workdone
31. Reversible adiabatic process is also known as _____ .
- (A) Isothermal process (B) Isobaric process
(C) Isochoric process (D) Isentropic process
32. Otto cycle consists of _____ _____ process.
- (A) Two adiabatic and Two constant volume
(B) Two adiabatic and Two constant pressure
(C) Two adiabatic and Two isothermal
(D) None of the above
33. In a 4 - stroke cycle engine :
- (A) there is one power stroke in each revolution of the crank shaft
(B) there is one power stroke in every two revolutions of the crank shaft
(C) there is one power stroke in each half revolution of the crank shaft
(D) none of the above
34. A single cylinder 4 - stroke engine is rotating at 2000 rpm. The number of power strokes occurring per minute :
- (A) 2000 (B) 500 (C) 1000 (D) 4000
35. Brake thermal efficiency is the ratio of :
- (A) Brake power to Heat input of the engine
(B) Brake power to Total fuel consumption of the engine
(C) Brake power to Specific fuel consumption of the engine
(D) Brake power to Indicated power of the engine
36. Morse test is conducted on a multi-cylinder engine to determine _____ .
- (A) the mechanical efficiency of each cylinder
(B) the volumetric efficiency of each cylinder
(C) the brake power of each cylinder
(D) the Indicated power of each cylinder

37. The statement "It is impossible to construct an engine working on cyclic process, whose sole purpose is to convert the whole heat energy supplied to it into an equivalent amount of work" is known as _____ .
- (A) Clausius statement (B) Kelvin-Planck statement
(C) Joule's statement (D) Avagadro's statement
38. The volumetric efficiency of a compressor is defined as :
- (A) the ratio of swept volume of cylinder to the actual volume of air entering
(B) the ratio of swept volume to the total volume of reservoir tank
(C) the ratio of actual volume of air entering to the swept volume of cylinder
(D) the ratio of actual volume of air entering to the total volume of reservoir tank
39. During an isothermal process, all properties of the working fluid changes except _____ .
- (A) Pressure (B) Volume (C) Temperature (D) Entropy
40. Select the wrong set :
- (A) Carburettor - Petrol engine (B) Two stroke engine - Ports
(C) Air cooled engine - Fins (D) Diesel engine - Spark plug
41. The limit up to which Hook's law is obeyed is called :
- (A) Yield point (B) Braking point
(C) Limit of proportionality (D) Ultimate point
42. The maximum angle of an inclined plane at which a body can remain in equilibrium on the plane entirely by the assistance of friction is called :
- (A) Friction angle (B) Angle of repose
(C) Co-efficient of friction (D) Cone of friction
43. Moment of inertia of a circular section is :
- (A) $\frac{\pi R^4}{4}$ (B) $\frac{\pi R^4}{8}$ (C) $\frac{\pi R^4}{16}$ (D) $\frac{\pi R^4}{32}$
44. In a simply supported beam with uniformly distributed load, shear force is maximum at the :
- (A) Support ends (B) Centre
(C) Same at all the points (D) No shear force

45. The diameter of a rivet by Unwinn's formula for a plate thickness of 9 mm :
 (A) 12 mm (B) 15 mm (C) 24 mm (D) 18 mm
46. Point of Contraflexure is where :
 (A) Bending moment is maximum (B) Bending moment is zero
 (C) Shear force is maximum (D) Shear force is zero
47. A simply supported beam carries two equal loads 'W' at a distance of 'L/3' from either supports. The Maximum Bending moment is :
 (A) $\frac{WL}{3}$ (B) $\frac{WL}{4}$ (C) $\frac{WL}{8}$ (D) $\frac{2WL}{3}$
48. Poisson's ratio is defined as the :
 (A) ratio of axial strain to transverse strain
 (B) ratio of shear stress to shear strain
 (C) modulus of ratio of transverse strain to axial strain
 (D) Ratio of direct stress to volumetric strain
49. The lead of a two start screw thread is equal to :
 (A) pitch (B) twice of the pitch
 (C) half of the pitch (D) twice of the depth of thread
50. Horizontal force required to pull a body of weight of 200 N along a horizontal surface with a coefficient of friction of 0.2 is :
 (A) 200 N (B) 100 N (C) 50 N (D) 40 N
51. Economiser in a steam boiler is used to :
 (A) Increase the temperature of super heated steam
 (B) To indicate the water level inside the boiler
 (C) Heat the feed water by utilising the heat in the exhaust gases
 (D) Regulate the supply of water pumped into the boiler
52. The function of a moderator in a nuclear power plant is to :
 (A) Absorb the thermal neutrons and control the chain reaction
 (B) Take away the heat from reactor to the heat exchanger
 (C) Store the fissionable material for better control of reaction
 (D) Slow down the fast moving fission neutrons

53. The function of a surge tank in a hydro-electric power plant is to :
- (A) Carry the water to the turbine nozzle
 - (B) Reduce the water hammer inside the penstock pipe occur during sudden closure of the nozzle
 - (C) Regulate the water flow rate to the turbine
 - (D) Increase the workdone by reducing pressure head
54. If an engine lathe is equipped with a four stepped cone pulley head stock and back gear arrangement, then the total spindle speed obtained will be :
- (A) 4
 - (B) 6
 - (C) 10
 - (D) 8
55. Positive back rake angle for a carbide tool is preferred for machining :
- (A) Harder material
 - (B) Softer material
 - (C) Brittle material
 - (D) All materials
56. If the lathe spindle and lead screw rotate with same RPM while thread cutting operation. Then the pitch of thread of the work piece will be :
- (A) Equal to the lead screw pitch
 - (B) Equal to half the pitch of lead screw
 - (C) Equal to the pitch of rack and pinion
 - (D) Equal to twice the lead screw pitch
57. Rough cutting, semifinishing and finishing operations are completed in a single stroke of tool pass by using :
- (A) Boring tool
 - (B) Reaming tool
 - (C) Drilling tool
 - (D) Broaching tool
58. Total number of tools that can hold on a turret lathe is up to :
- (A) 6
 - (B) 14
 - (C) 10
 - (D) 8
59. Dressing and truing related with :
- (A) Grinding wheel
 - (B) Milling cutter
 - (C) Knurling tool
 - (D) Gang drilling
60. Counter sinking is the operation of :
- (A) Machining the entrance of the hole in a conical shape to accommodate screw head
 - (B) Enlarging the hole with a boring tool
 - (C) Making internal threads
 - (D) Drilling stepped holes

61. _____ is the passage around the cylinder through which water is allowed to flow to cool the cylinder.
 (A) Water Jacket (B) Port (C) Manifold (D) Fin
62. Top of the piston is called _____.
 (A) Boss (B) Dome (C) Skirt (D) Land
63. On an engine that drives an automatic transmission a _____ is used in the place of a flywheel.
 (A) Back Plate (B) Harmonic Balancer
 (C) Balance Shaft (D) Flex Plate
64. _____ Articulates the piston to the small end of the connecting rod.
 (A) Eye Bolt (B) Wrist Pin (C) King Pin (D) Crank Pin
65. _____ are used to transmit the force from the camshaft to the push rods in an over head valve engine.
 (A) Tappets (B) Timing Gears (C) Rocker Arms (D) Valve Guides
66. To enrich the mixture to a Degree necessary to start the Petrol Engine, the carburettor is provided with _____ system.
 (A) Main metering (B) Idling (C) Choke (D) Acceleration
67. Carburettor _____ is intended to Prevent Enrichment of the Mixture in case of clogging of Air cleaner.
 (A) Balancing (B) Flooding (C) Tuning (D) Compensation
68. In Diesel Engine _____ delivers finely divided atomized fuel under High pressure to the combustion chamber.
 (A) Governor (B) Injector
 (C) Fuel feed pump (D) Fuel injection pump
69. _____ valve regulates the flow of water to the radiator.
 (A) PCV (B) Pressure Relief (C) Vacuum (D) Thermostat

70. _____ is a pipe line from oil pump to the oil stored in the oil pan.
 (A) Oil filter (B) Oil Gallery
 (C) Oil pump pick up (D) Pressure relief valve
71. The spindle of the steering knuckle carries the _____ mounted on tapered roller bearing.
 (A) Tie Rod (B) Wheel Hub (C) Wheel Rim (D) Brake Drum
72. _____ provide a rigid structural foundation for vehicle body and A solid anchorage for suspension system.
 (A) Upholstery (B) Frame
 (C) Front Axle (D) Engine mountings
73. _____ occurs when the wheel hits a Dip or Hole and moves downward.
 (A) Rebound (B) Wobble (C) Jounce (D) Rolling
74. Amount of load necessary to Deflect the spring is termed _____.
 (A) Sprung weight (B) Unsprung weight
 (C) Axle load (D) Spring rate
75. Short long arm suspension is commonly known as _____ system.
 (A) Torsion Bar (B) Leaf spring
 (C) A-Frame wish bone (D) Mac pherson strut suspension
76. _____ uses sliding pair, which means more friction and easy wearing of steering components.
 (A) Davis steering (B) Power steering
 (C) Rack and Pinion steering (D) Ackerman steering
77. _____ connects the two front stub axles through an arm.
 (A) Pitman arm (B) Tie rod (C) Steering column (D) Torsion bar
78. Ratio of steering wheel angle turned to stub axle angle turned is called _____.
 (A) Turning Radius (B) Toe in
 (C) Steering Gear Ratio (D) Aspect Ratio

79. Disc Brakes are also known as _____ Brakes.
 (A) Leading brake (B) Trailing brake
 (C) Internal expanding brake (D) External contracting brake
80. _____ valve in the front brake line of hydraulic brake system holds off pressure going from master cylinder to front disc calipers.
 (A) Schrader valve (B) Metering valve
 (C) Bleeder valve (D) Proportioning valve
81. If the clutch disc is not completely released when clutch pedal is fully depressed, _____ occurs.
 (A) Clutch Drag (B) Chatter (C) Pedal Pulsation (D) Clutch slippage
82. Belleville spring is the other name for _____ .
 (A) Leaf spring (B) Diaphragm spring
 (C) Cushion spring (D) Coil spring
83. _____ is used to ensure that the main shaft and main speed gear to be Locked to it are rotating at the same speed.
 (A) Transfer Case (B) Transaxle (C) Shift fork (D) Synchronizer
84. Cluster gear is other name for _____ .
 (A) Idler Gear (B) Main Shaft Gear
 (C) Countershaft Gear (D) Final Drive Gear
85. _____ are commonly used on Front wheel drive vehicles.
 (A) Transaxles (B) Double Reductions
 (C) Synchronizers (D) Slip Joints
86. Inflation Pressure is associated with _____ .
 (A) Combustion chamber (B) Cooling system
 (C) Shock Absorber (D) Tires
87. A Tire's _____ is the relation of its cross section height compared to the cross section width.
 (A) Rotation (B) Profile
 (C) Placard (D) Tread wear indicator

88. Function of _____ is to keep positive and negative plates apart when they are assembled in the battery and so prevent internal short circuit.
(A) Pole strap (B) Core connector (C) Separator (D) Splash plate
89. _____ is a topping up device for Battery.
(A) Alternator (B) Charger (C) Jump start (D) Aqua lok
90. _____ circuit consists of the secondary winding of the ignition coil, the distributor, the High tension wires and Spark Plugs.
(A) Primary (B) Charging (C) High Tension (D) Rectifier
91. _____ is an occurrence in the use of motor vehicle resulting in injury to or death of a Person or Animal or Damage of any property.
(A) Accident (B) Insurance (C) Surveying (D) Policy
92. _____ is the width of land to be acquired for Road purposes, keeping in view future requirements.
(A) Set back distance (B) Carriage way
(C) Right of way (D) Shoulder width
93. _____ means a certificate issued by a competent authority to the effect that a motor vehicle has been duly Registered in Accordance with provision of chapter IV of M.V. Act.
(A) PUC Certificate
(B) Vehicle Insurance Certificate
(C) Road Worthiness Certificate
(D) Certificate of Registration
94. _____ means any mechanically propelled vehicle adapted to use upon roads, which is self propelled.
(A) Motor vehicle (B) Omni Bus (C) Maxi Cab (D) Motor Cab
95. An Accident or Fire Damage vehicle is deemed to be a _____ if the cost of repairs exceeds the Pre Accident market value.
(A) Salvage (B) Obsolete (C) Total loss (D) Value added tax

96. Single point fuel injection is also called _____ .
(A) MPFI system (B) Fuel Delivery system
(C) Synchronous injection (D) Throttle Body injection
97. _____ sensors measure changes in intake manifold pressure caused by changes in Engine speed and load and convert them into Electrical signals.
(A) Air vortex (B) Throttle position
(C) Map (D) Vehicle speed
98. EGR is Employed to reduce amount of _____ in Emissions.
(A) NO_x (B) CO (C) UBHC (D) SO₂
99. _____ systems use Global positioning satellites to help drivers make travel decisions while they are on the road.
(A) Keyless entry (B) Navigation (C) Pass key (D) Vehicle Tracking
100. Supplemental inflatable restraint on modern vehicles are better known as _____ .
(A) Ignition kill systems (B) Seat Belts
(C) Collapsible Steering system (D) Air Bag system

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SPACE FOR ROUGH WORK

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