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Question Booklet Sl. No.

Question Booklet Alpha Code

A

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Total Number of Questions : 100

Time : 90 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/her 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.

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1. Which of the following statement is/are correct about scriber ?
 - i. It is made of high carbon steel and is hardened.
 - ii. The point should be ground and honed frequently for maintaining its sharpness.
 - iii. Bend point is used to drawing circles on the surface.A) Only ii and iii B) Only i and ii
C) All of the above i, ii and iii D) Only iii

2. Which of the following statement is/are correct about first aid for burn ?
 - i. Use creams or ointments immediately if the burn is second degree.
 - ii. If the burn is third degree, should be covered with a damp cloth.
 - iii. Immersing or flushing with cool water if the burn is first degree.A) Only ii and iii B) Only i and ii
C) All of the above i, ii and iii D) Only iii

3. Which of the following statement is/are not correct about a ball pein hammer ?
 - i. The wedges fix the handle in the 'eye hole'.
 - ii. The weight of the hammer is stamped on face.
 - iii. Hammer is made of drop-forged carbon steel.A) Only i B) Only ii
C) Only i and ii D) All of the above i, ii and iii

4. Diamond point chisels is used to
 - A) Chip-off excess metal of welded joints and castings
 - B) Cutting key ways
 - C) Squaring materials at the corners
 - D) Cutting oil grooves

5. As per Indian standard, kitchen fires (fire involve combustible cooking media such as vegetable or animal oils and fats) are categorised under
 - A) Class K B) Class D
 - C) Class F D) None of these

6. Which of the following statement is/are not correct about Jenny caliper ?
- It is used for marking lines parallel to the inside and outside edges.
 - Another name of this caliper is leg and point calipers.
 - Jenny caliper is used drawing circles on the work.
- A) Only i and iii B) Only i and ii
C) All of the above i, ii and iii D) Only iii
7. Which metal is used to make steel rule ?
- A) Mild steel B) Tool steel
C) High carbon steel D) Stainless steel
8. Which of the following statement is/are correct about file ?
- Heel is curved part of file separating tang from the body.
 - Ferrule is a protective metal ring to prevent cracking of the handle.
 - Shoulder is thin part of the file with a single row of parallel teeth.
- A) Only i and ii B) Only iii
C) Only ii D) All of the above i, ii and iii
9. Which special file is used for die-sinking work ?
- A) Riffler file B) Mill saw file
C) Barrette file D) Crossing file
10. Find the exact drill size for tapping M10 × 1.5 thread.
- A) 8.16 mm B) 8.32 mm C) 8.42 mm D) 8.56 mm
11. The accuracy of measurement by a try square is about
- A) 0.001 mm per 10 mm length B) 0.02 mm per 10 mm length
C) 0.002 mm per 10 mm length D) 0.005 mm per 10 mm length
12. Which of the following statement is/are correct about Drilling machine ?
- When the size of drill taper shank is bigger than machine spindle, taper sockets are used.
 - When the size of drill taper shank is smaller than machine spindle, sleeves are used.
 - Sleeves and sockets are made with morse taper.
- A) Only ii and iii B) Only i and iii
C) Only iii D) All of the above i, ii and iii

13. Which of the following statement is/are not correct about straight edge ?
- It is used to mark straight lines on a metal surface.
 - It can be used to check 90 degree angles.
 - It can be used to check 45 degree angles.
- A) Only ii and iii B) Only iii
C) All of the above i, ii and iii D) Only ii
14. Find the blank size for cutting the external thread of M12 with 1.75 mm pitch.
- A) 10.70 mm B) 12.00 mm
C) 11.80 mm D) 13.75 mm
15. Which type of fasteners is used to positioning and holding collars in place, on shafts ?
- A) Cap screws B) Set screws
C) Machine bolts D) Stud bolts
16. Which of the following statement is/are correct in case of tap ?
- The taper tap is used to start the thread.
 - The bottoming tap is used to finish the threads of a blind hole.
 - Another name of second tap is 'plug tap'.
- A) Only i B) Only i and ii
C) Only iii D) Only i and iii
17. Which of the following statement is/are correct about outside micrometer ?
- It is used to measure a job, generally within an accuracy of 0.01 mm.
 - The datum line and graduations are marked on the barrel.
 - The threaded mechanism allows for the forward and backward movement of the spindle.
- A) Only i and iii B) Only i and ii
C) Only iii D) All of the above i, ii and iii
18. Which gauge is used to compare the profile of thread ?
- A) Plug gauge B) Screw pitch gauge
C) Radius gauge D) Feeler gauge

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19. What is the minimum dimension can measure with telescopic gauge ?
A) 8.0 mm B) 12.7 mm C) 19.0 mm D) 15.0 mm
20. How the wide range of depth can be measured by depth micrometer ?
A) Lengthy sleeve
B) Lengthy spindle
C) Adjustable base
D) Equipped with a set of extension rods
21. An Otto cycle consists of
A) two adiabatic and two constant pressure lines
B) two adiabatic and two constant volume lines
C) one adiabatic and one constant pressure line
D) one adiabatic and one constant volume line
22. What is the working cycle of compression ignition engine ?
A) Diesel cycle B) Otto cycle
C) Rankin cycle D) Sterling cycle
23. For a given engine if we double the cylinder diameter the power output will be
A) same as before
B) less than before
C) increase two times than before
D) increase four times than before
24. What is the volume of the space above the piston at TDC ?
A) Swept volume B) Displace volume
C) Clearance volume D) Total volume
25. The two firing orders used on four cylinder in-line engines are
A) 1-3-4-2 and 1-4-2-3 B) 1-3-2-4 and 1-2-4-3
C) 1-2-4-3 and 1-3-4-2 D) 1-4-3-2 and 1-3-2-4
26. In a Diesel cycle combustion takes place at
A) Constant volume B) Constant pressure
C) Constant vacuum D) Constant temperature

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27. In a four stroke cycle engine during valve overlap
- A) the intake valve is closing
 - B) the exhaust valve is beginning to open
 - C) the piston is at TDC on the power stroke
 - D) both valves are open
28. Exhaust valves are opened at a definite degree before BDC in engine valve timing. This is called
- A) Lap
 - B) Lead
 - C) Overlap
 - D) Clearance
29. Engines with stroke/bore ratio is less than 1 are called _____ engines.
- A) oversquare
 - B) undersquare
 - C) square
 - D) velox square engines
30. For the same power output under similar conditions, a diesel engine will have to have a cylinder capacity at least _____ % greater than the equivalent petrol engine.
- A) 5
 - B) 10
 - C) 15
 - D) 20
31. In a six-cylinder inline engine there is a power impulse in every _____ degree of crankshaft rotation.
- A) 90
 - B) 120
 - C) 180
 - D) 360
32. What is the effect of taper and ovality of a bore ?
- A) Fuel leakage
 - B) Compression loss
 - C) False valve timing
 - D) More power
33. All of these statements about engine oil pumps are true except
- A) The oil pump may be driven off the front of the crankshaft
 - B) The pressure relief valve prevents excessive oil pump pressure
 - C) The oil pump may be rotor type or gear type
 - D) A calibrated spring holds the oil pressure relief valve open
34. Which valve is maintaining in the high pressure FIP pipe line ?
- A) Control rack
 - B) Barrel
 - C) Plunger
 - D) Delivery valve

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35. At the top of the cylinders, if the coolant circulation passages ends just below the block's machined joint face it is then called
A) Closed deck
B) Open deck
C) Horizontal deck
D) Vertical deck
36. The pressure of gas in a container goes up when the gas is heated and goes down when the gas is cooled. This fact is used in
A) Turbine Engine
B) Radial Engine
C) Sterling Engine
D) Opposed Engine
37. The term _____ means the rapid removal of irregularities of new compression rings.
A) Wear-out
B) Filing
C) Smoothing
D) Wear-in
38. Usually Camshaft is made off
A) Cast iron
B) Forged alloy steel
C) Aluminium alloy
D) Low carbon steel
39. What is the type of hardening done on crankshaft ?
A) Surface hardening
B) Case hardening
C) Induction hardening
D) Curve hardening
40. The function of _____ is to form a guide suitable for absorbing side thrust due to gas pressure in an engine.
A) Piston skirt
B) Piston land
C) Piston ring
D) Piston pin
41. In air cooling system the heat dissipation not depend which of the following factor ?
A) Flow rate of air
B) Surface area of metal in contact with air
C) Colour of fins around the cylinder
D) Conductivity of metal
42. Which type of thermostat valve is also known as Aneroid type thermostat ?
A) Bellows type
B) Wax type
C) Hydrostatic type
D) Bi-metal type
43. What is the probable cause of engine over heating ?
A) Radiator pressure cap stuck closed
B) Loose fan belt
C) Thermostat stuck in open position
D) All of these

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44. Which of the following is a commonly used corrosion inhibitor in engine coolant ?
 A) Ethylene glycol
 B) Glycerine
 C) Methyl alcohol
 D) Silicates
45. In which type of engine, Keel cooling system is generally used ?
 A) Two stroke engines
 B) Heavy duty engines
 C) Marine engines
 D) Air craft engines
46. In which types of oil filtering system all the oil passes through a filter before reaching oil gallery and provide a bypass valve ?
 A) Bypass oil filtering system
 B) Full flow oil filtering system
 C) Half flow filtering system
 D) All of these
47. Which value of lubricant is determined by conducting the cold test ?
 A) Pour point
 B) Flash point
 C) Viscosity
 D) Specific gravity
48. In petrol lubrication system, what is the ratio of petrol and lube oil mixture generally used ?
 A) 2 : 1
 B) 20 : 1
 C) 10 : 1
 D) 8 : 1
49. The minimum temperature at which oil gives off sufficient vapour to form combustible mixture with air is known as
 A) Flash point
 B) Fire point
 C) Combustion point
 D) Pour point
50. The API has provided service classification for lubricating oil, which of the following is a service rating for diesel engine oils ?
 A) SD
 B) SB
 C) CF
 D) CB
51. Which fuel pipe line is provided in between FIP and injectors ?
 A) Overflow pipe
 B) Suction pipe
 C) Pressure pipe
 D) Vacuum pipe
52. Which part of the FIP helps to maintaining the pressure in the high pressure pipe line ?
 A) Control rack
 B) Delivery valve
 C) Helix slot
 D) Control sleeve
53. Which type of diesel injector nozzle produces a hollow cone shaped spray ?
 A) Single hole type nozzle
 B) Multi hole nozzle
 C) Pintle type nozzle
 D) Long stem nozzle

54. In which type of combustion chamber design, used an auxiliary chamber nearly spherical in shape, which occurs almost full charge at the end of compression ?
- A) Pre-combustion chamber B) Air cell chamber
C) Energy cell chamber D) Turbulence chamber
55. The most accurate petrol fuel injection system is
- A) Port injection B) Direct injection
C) Manifold injection D) Throttle body injection
56. Which of the following statement is true about Glow plug ?
- A) It's a decompression device B) Installed in the inlet manifold
C) Screwed into the combustion chamber D) Heat the diesel before injection
57. Which of the sensor helps to find engine temperature and send information to ECM ?
- A) ECT sensor B) IAT sensor
C) Heated oxygen sensor D) TP sensor
58. Which of the following is considering as an actuator used in electronic diesel control system ?
- A) Injector solenoid B) Fuel pump relay
C) EGR valve D) All of these
59. Which fuel system develops the high diesel pressure by using hydraulic energy from lubrication oil ?
- A) Rotary pump system B) Distributor FIP
C) HEUI fuel system D) CRDI fuel system
60. The Electronic Diesel Control (EDC) system consists of various sensors, which of the sensor fails, engine does not start ?
- A) ECT sensor B) CKP sensor
C) IAT sensor D) HO₂ sensor
61. According to valve timing diagram, in actual practice
- i. Inlet valve opens at T.D.C.
ii. Inlet valve opens before T.D.C.
iii. Exhaust valve closes after T.D.C.
iv. Exhaust valve closes at T.D.C.
- A) Only i, ii and iii B) Only ii, iii and iv
C) All the above i, ii, iii and iv D) Only ii and iii

62. Which of the following is/are changed in a VVT technology ?
- Valve lift
 - Duration of valve opening or closing
 - Valve timing
 - Valve rotation
- A) Only i and iii B) Only i, iii and iv
C) Only i, ii and iii D) Only i and iv
63. Materials used for inlet and exhaust valves are
- Silico-chrome steels are used for inlet valves.
 - Nimonic alloys are used for inlet valves.
 - Nimonic alloys are used for exhaust valves.
 - Silico-chrome steels are used for exhaust valves.
- A) Only ii and iv B) Only i, iii and iv
C) Only i and iii D) All of the above i, ii, iii and iv
64. Which one of the following mufflers reducing the noise to zero, theoretically ?
- A) Resonance type muffler B) Baffle type muffler
C) Wave cancellation type muffler D) Absorber type muffler
65. What is the purpose of a MAP sensor in a turbo charged engine ?
- A) Monitor turbo boost pressure B) Regulate transmission shifting
C) Measure oil pressure D) Control exhaust gas recirculation
66. What is 'soot' of an engine emission control system ?
- A) Dirt B) Dust
C) Liquid droplets D) Unburnt carbon
67. Which one of the following methods not used to reduce the formation of pollutants ?
- A) Closed crankcase ventilation B) Reducing evaporative emissions
C) Use of HCCI engine D) Increasing compression ratio

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68. The purpose of the heat control valve in some exhaust manifolds is to
- A) Improve fuel vaporization
 - B) Add heat to the air-fuel mixture
 - C) Improve cold-engine performance
 - D) All of the above
69. Technician A says the valve rotates slightly as it closes.
Technician B says the valve rotates slightly as it opens.
- A) A only
 - B) B only
 - C) Both A and B
 - D) Neither A nor B
70. Which part of the vehicle's emission control system is responsible for injecting AdBlue ?
- A) EGR valve
 - B) SCR catalyst
 - C) DPF filter
 - D) Turbocharger
71. All the following are true except
- A) Worn valve-train parts increase valve-train clearance
 - B) Hydraulic valve lifters require periodic adjustment
 - C) Refinishing valves and seats reduces valve-train clearance
 - D) Exhaust valve clearance usually is greater than intake valve clearance
72. Install compression rings in a piston
- A) With a ring expander
 - B) As a press fit
 - C) With plastigauge
 - D) By spiraling them into place
73. Remove the ridge formation before taking the piston out of the cylinder to avoid
- A) Scratching the cylinder wall
 - B) Breaking the connecting rod
 - C) Damaging the piston pin
 - D) Breaking the piston lands
74. Check crankshaft main-bearing journals for
- A) Bend and stretch
 - B) Taper, ridges and out-of-round
 - C) Spots and color
 - D) All of the above

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75. Removing the glaze from cylinder walls before installing new piston rings helps avoid
- A) Excessive friction
 - B) Engine overheating
 - C) Slow seating of the piston rings
 - D) Quick seating of the piston rings
76. After boring or honing cylinders, clean and protect the cylinder walls with
- A) Soapy water and light oil
 - B) Gasoline and kerosene
 - C) Light oil and gasoline
 - D) Steam cleaning and air drying
77. No cranking and no lights when the key is turned to START may be caused by all the following except
- A) An open circuit
 - B) A dead battery
 - C) An open fusible link
 - D) Burned out light bulbs
78. The opening pressure of pintle type nozzle varies from
- A) 7-15 MPa
 - B) 35-45 MPa
 - C) 8-11 MPa
 - D) 18-22 MPa
79. In a FIP (Fuel Injection Pump), the tendency to dribbling or secondary injection is eliminated by
- A) Injection pump plunger
 - B) Helix cutting on the plunger
 - C) Lowering of the delivery valve
 - D) Vertical slot on the plunger
80. For a 6-cylinder four stroke diesel engine have distributor type fuel injection pump, then the number of suction ports in the injection pump are
- A) 4
 - B) 8
 - C) 10
 - D) 6
81. What is meant by static electricity ?
- A) Electricity in motion
 - B) Electricity that does not move
 - C) Electricity with low potential difference
 - D) Electricity with high potential difference

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82. Electrical behavior of material with 5 valance electrons
A) Conductor
B) Insulator
C) Semiconductor
D) Super conductor
83. Which type of fuse, in which fuse element assembled in a glass tube ?
A) Cartridge fuse
B) Blade fuse
C) Kit Kat fuse
D) Circuit breaker
84. Which acid is used in lead acid battery ?
A) Sulfuric acid
B) Nitric acid
C) Formic acid
D) Citric acid
85. Which of the following is a type of 'Non-replaceable fuse' ?
A) Cartridge fuse
B) Blade fuse
C) Relay
D) Circuit breaker
86. Which battery generally used in Maruti 800 ?
A) 7 AH
B) 35 AH
C) 100 AH
D) 120 AH
87. What is the purpose of grid in battery plates ?
A) To hold active materials
B) To separate positive plate and negative plate
C) To connect plates to separator
D) To strengthen battery container
88. Which of the following is used for reducing oxidation of battery terminals ?
A) Grease
B) Paint
C) Oil
D) Petroleum jelly
89. In solenoid switch, the pull-in winding is wounded with
A) Thick wire in series winding
B) Thin wire in series winding
C) Thin wire in shunt winding
D) Thick wire in shunt winding
90. Which of the following part is not included in relay ?
A) Fixed contact
B) Movable contact
C) Diaphragm
D) Hinged arm
91. Which device produce more electricity at low RPM ?
A) Alternator
B) DC Generator
C) Dynamo
D) Battery

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92. What is the necessity of Diodes in an alternator ?
 A) To regulate output voltage B) To convert AC to DC
 C) To regulate output current D) To convert DC to AC
93. Automobiles are generally equipped with
 A) Series type starter B) Shunt type starter
 C) Compound starter D) Parallel type starter
94. What is the purpose of overrunning clutch in starter motor ?
 A) Overloading of armature B) To protect solenoid clutch
 C) Maintain same speed with engine D) Over speeding of armature
95. In alternator, field terminal is connected to battery through
 A) Ignition switch B) Indicator lamp
 C) Charge indicator D) Rectifier
96. How many brushes are provided in the alternator rotor assembly with eight interlocking fingers ?
 A) 8 B) 2 C) 4 D) 16
97. How the output current did regulate in alternator ?
 A) By self-limiting action B) By regulator
 C) By rectifier D) By cut out relay
98. Which type of bearing generally used in Alternator drive end frame ?
 A) Roller bearing B) Needle bearing
 C) Bush bearing D) Ball bearing
99. What is the gear ratio between a 4-pole starter motor pinion and fly wheel ring gear ?
 A) 5 : 1 B) 8 : 1
 C) 15 : 1 D) 25 : 1
100. What is meant by Inboard type starter motor ?
 A) The pinion moves toward starting motor
 B) The fly wheel moves inwards to engine
 C) The pinion moves away from starting motor
 D) Starter armature shaft moves away from starting motor

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Space for Rough Work

