

051/2019

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.

051/2019

1. Least count of vernier micrometer is _____.
(A) 0.01 mm (B) 0.02 mm (C) 0.001 mm (D) None of these
2. In a double cut file, one cut is at an angle of 70° . What is the angle of the other cut ?
(A) 45° (B) 65° (C) 75° (D) 51°
3. Ra value in microns for Roughness Number N4 is _____.
(A) 0.2 (B) 0.1 (C) 0.05 (D) 0.25
4. $\nabla\nabla$ is the Roughness symbol for Roughness grade number _____.
(A) N1 (B) N3
(C) N5 (D) None of the above
5. In assemblies, the parts are located by using taper pins. What is the taper of such pins ?
(A) 1:100 (B) 1:40 (C) 1:50 (D) 1:20
6. Vernier micrometer have additional equally spaced vernier graduations given above the datum line. The no. of such vernier graduations are _____.
(A) 5 (B) 10 (C) 25 (D) 50
7. Adjustable caliper gauges are used for _____.
(A) Checking the accuracy of vernier calipers
(B) Checking the size of a caliper
(C) Checking internal diameters of parts
(D) Checking external diameters of parts
8. The process of chemical reduction of the iron ore to pig iron is known as _____.
(A) Melting (B) Refining (C) Smelting (D) Purification
9. The furnace used for the manufacturing of steel from pig iron is known as _____.
(A) Puddling furnace (B) Blast furnace
(C) Bessemer furnace (D) None of the above

10. Wringing is the act of joining _____ together.
 (A) Ring gauge (B) Slip gauge
 (C) Shaft and bearing (D) None of the above
11. Angle of counter sinking portion of centre drill is _____.
 (A) 30° (B) 45° (C) 60° (D) 90°
12. Shaping of a grinding wheel to make it run concentric with the axis is known as _____.
 (A) Dressing (B) Truing (C) Shaping (D) Balancing
13. Least count of vernier bevel protractor is _____.
 (A) 1' (B) 5' (C) 0.5° (D) 1°
14. If 'd' is the diameter and 'n' is the rpm, then cutting speed is _____.
 (A) $\pi dn/1000$ m/min (B) $\pi dn/1000$ cm/min
 (C) $\pi dn/100$ m/min (D) πdnt
15. Different types of errors may occur when we take measurements. Cosine error is related to which measuring instruments ?
 (A) Sine bar (B) Slip gauge
 (C) Dial test indicator (D) Vernier Caliper
16. The lathe beds are mostly made of _____.
 (A) Pig iron (B) Wrought iron (C) Grey cast iron (D) Carbon steel
17. Which one of the following is not a parts of a lathe ?
 (A) Saddle (B) Cross slide (C) Apron (D) Arbor
18. Conicity is _____.
 (A) $(D - d)/2$ (B) $(D - d)/2 L$ (C) $(D - d)/L$ (D) $(D - d) L/2$
19. Bell metal is an alloy of _____.
 (A) Zinc and Copper (B) Zinc and Aluminium
 (C) Nickel and Copper (D) Tin and Copper

20. In Indian Standard system for Limits and Fits, there are _____ grades of Fundamental tolerances.
(A) 12 (B) 16 (C) 18 (D) 25
21. In a plane or simple index head, one complete rotation of the index crank rotates the spindle by _____.
(A) One revolution (B) 40 revolutions
(C) 1/40 of a revolution (D) 1/4 of a revolution
22. Cast metal bonding to the die casting surface is known as _____.
(A) Slag (B) Welding (C) Soldering (D) Flash
23. The amount of die opening at the time the angled pin contacts the core block in die casting dies is known as _____.
(A) Clearance (B) Shut height (C) Dwell (D) Day light
24. Which half of the die casting dies is secured to the stationary platen of the machine ?
(A) Cover half (B) Ejector half
(C) Hot chamber (D) None of the above
25. Which grade of grinding wheel is preferred for grinding hard metals ?
(A) Hard grade wheels (B) Soft grade wheels
(C) Open structure wheels (D) None of the above
26. In an electric discharge machining process, electrode is connected to _____.
(A) Anode (B) Cathode (C) Bed (D) Saddle
27. Clapper box are used on shaper to _____.
(A) Move the tool fast in return stroke
(B) To lift the tool in return stroke
(C) To move the tool fast in forward stroke
(D) To lift the tool in forward stroke

28. A 200 mm long cylindrical piece has one end dia. is 100 mm and the second dia. is 80 mm. The amount of Conicity is _____.
- (A) 0.1 (B) 0.5 (C) 1.0 (D) 10
29. The heat treatment process for relieving internal stress after cold working in metals is known as _____.
- (A) Annealing (B) Normalising (C) Tempering (D) Hardening
30. The hardening temperature of HSS is _____.
- (A) 725°C (B) 850°C (C) 950°C (D) 1250°C
31. M code for coolant ON is _____.
- (A) M05 (B) M06 (C) M08 (D) M30
32. This method of actuation is used when a greater split delay is required _____.
- (A) Finger cam actuation (B) Dog leg cam actuation
(C) Cam track actuation (D) Spring actuation
33. The space between two mould halves, when the mould is opened is termed as _____.
- (A) Shut height (B) Day light (C) Spacing (D) Opening
34. _____ is the only possible method to encapsulate delicate electronic parts.
- (A) Transfer moulding (B) Compression moulding
(C) Injection moulding (D) Insert moulding
35. It is a process of forming hollow articles from a softened plastic tube.
- (A) Injection moulding (B) Compression moulding
(C) Blow moulding (D) Extrusion moulding
36. The defects on a die cast component due to cold metal, slow shot, low die temperature is known as _____.
- (A) Sink marks (B) Cracks (C) Cold shut (D) Wave or lake

37. Lead is produced from its ore _____.
- (A) Bauxite (B) Malachite (C) Pirates (D) Galena
38. Melting point of Aluminium is _____.
- (A) 360°C (B) 420°C (C) 660°C (D) 725°C
39. Non selective assembly is _____.
- (A) Slow and costly (B) Rapid and costs are reduced
(C) Not suitable in mass production (D) None of the above
40. There are _____ Fundamental deviations in the BIS system of Limits and Fits.
- (A) 12 (B) 16 (C) 18 (D) 25
41. Which is an interference fit ?
- (A) 25H7/p6 (B) 25H7/g6 (C) 25H7/e6 (D) 25H7/b6
42. The fundamental deviation symbol 'H' is chosen for the holes, when the hole basis system is followed. This is because _____.
- (A) 'H' is the first letter of Hole
(B) The lower deviation of the Hole 'H' is zero
(C) The upper deviation of the Hole 'H' is zero
(D) The lower and upper deviation of the Hole 'H' is zero
43. The aperture of the sprue bush is tapered to facilitate _____.
- (A) Easy machining (B) Easy filling of impression
(C) Easy removal of the sprue (D) Easy removal of component
44. In a transfer moulding, excessive flash occurred due to _____.
- (A) Diameter of ejector pin too small (B) Mould not closed satisfactorily
(C) Insufficient draft (D) Inadequate venting

45. It is used to make continuous shapes such as tube, rods, pipes etc of thermoplastic is _____.
- (A) Rotational moulding (B) Blow moulding
(C) Compression moulding (D) Extrusion moulding
46. Moulding shrinkage increases with _____.
- (A) Increase of mould temperature (B) High injection pressure
(C) Longer injection time (D) Presence of fillers
47. For ejecting small cylindrical moulding _____ ejector is used.
- (A) Pin ejector (B) Blade ejector
(C) D-Shaped ejector (D) Sleeve ejector
48. Gate that provided below the parting surface of the mould is _____.
- (A) Fan gate (B) Submarine gate (C) Edge gate (D) Overlap gate
49. Heel blocks in moulds are also called _____.
- (A) Rust buttons (B) Support blocks (C) Die block (D) Ejector plate
50. The _____ aligns the mould to the machine nozzle.
- (A) Register ring (B) Dowel pin (C) Guide pillar (D) Sprue bush
51. Which pilot nose profile is stronger in strength and smoother in action ?
- (A) Bullet nose (B) 45° conical stub nose
(C) 15° conical stub nose (D) 30° conical stub nose
52. In press tools, the _____ guide the strips in the tool.
- (A) Pushers (B) Strip support
(C) Stops (D) Gauges
53. For faster manual feeding, which type of stoppers are preferred ?
- (A) Pin stop (B) Finger stop
(C) Solid stop (D) Trigger stop

54. Punches that perform cutting and non-cutting operations are called _____.
- (A) Floating punches (B) Hybrid punches
(C) Combination punches (D) Integrated punches
55. Stock materials which are fed individually into the tool for processing are called _____.
- (A) Blanks (B) Single stock (C) Component (D) Unit stock
56. The minimum amount of land in die opening is _____.
- (A) 1 mm (B) 1.5 mm
(C) 3 mm (D) Equal to sheet thickness
57. If the cutting clearance is optimum, cut band produced is approximately _____ the thickness of the stock material.
- (A) One half of (B) One third of (C) One fourth of (D) Same as
58. In blanking, cutting clearance is given on _____.
- (A) Punch (B) Die
(C) Both punch and die (D) Pilot
59. _____ may be considered as a series of shearing operations performed one after the other by the same tool.
- (A) Shearing (B) Broaching (C) Trimming (D) Planishing
60. When any holes require two or more tools to be used _____ bushes are used ?
- (A) Slip bushes (B) Liner bushes
(C) Renewable bushes (D) Special bushes
61. The pump used in a hydraulic power pack is _____.
- (A) Gear pump (B) Centrifugal pump
(C) Piston pump (D) Vane pump

62. This type of jig allows the part to be machined on every surface without repositioning the part in the jig.
 (A) Sandwich jig (B) Angle plate jig (C) Box jig (D) Channel jig
63. _____ clamps are not used when there are chances for strong vibration.
 (A) Cam action clamps (B) Screw clamps
 (C) Strap clamps (D) Power clamps
64. Minimum angle that can be indexed in a direct indexing is 10° . What is the maximum number of divisions that can be indexed ?
 (A) 10 (B) 12 (C) 24 (D) 36
65. The ability of the bond to hold abrasive grains in the grinding wheel is termed as _____.
 (A) Grit (B) Grade (C) Grain (D) Structure
66. A 12 mm diameter end mill is to be set for a cutting speed of 14 m/min. The rpm to be set on the machine should be _____.
 (A) 271.7 (B) 183.17 (C) 76 (D) 371.21
67. G code for dimensioning in inch mode is _____.
 (A) G20 (B) G22 (C) G70 (D) G71
68. When cutting and non-cutting operations takes place in a single station, it is called _____.
 (A) Combination tool (B) Progressive tool
 (C) Compound tool (D) Assembly tool
69. A small edge radius in blanked component is the result of cutting clearance is _____.
 (A) Sufficient (B) Insufficient (C) Excessive (D) Optimum
70. The burr side of a blank is always towards the _____.
 (A) Punch side (B) Die side
 (C) Both (A) and (B) (D) None of these

71. The cutting clearance for sheet metal with thickness 2 mm and shear strength 360 N/mm² is _____.
- (A) 0.012 mm/side (B) 1.2 mm/side (C) 2 mm/side (D) 0.12 mm/side
72. If the side of a square shaped component is 4 mm and the thickness is 2 mm and the shear strength is 360 N/mm². The cutting force is _____.
- (A) 11.52 kN (B) 10 kN (C) 15 kN (D) 30.6 kN
73. The operation of separating the stock material along a straight line in a double cut is called _____.
- (A) Cutting off (B) Trimming (C) Notching (D) Parting off
74. Screws and dowel holes drilled should be away from the edge and opening of the die by _____, if the diameter of the screw and dowel is d.
- (A) 1.5d (B) 2.5d (C) 0.5d (D) 0.75d
75. Pantograph die-sinking and engraving machine operates on the principle of _____.
- (A) Gang milling (B) Shaping (C) Planing (D) Copy milling
76. Punches located and positioned by punch holders are known as _____.
- (A) Integrated punches (B) Segregated punches
(C) Hybrid punches (D) Cutting punches
77. The exact position in which the stock strip must be positioned in order to obtain dimensionally correct component is _____.
- (A) Registry position (B) Stop position
(C) Finger stop position (D) None of the above
78. When it is necessary to clamp the strip in addition to its stopping function _____ is used ?
- (A) Travelling stripper (B) Fixed stripper
(C) Box stripper (D) None of the above
79. Bulge clearance is provided in the _____.
- (A) Die plate (B) Stripper plate (C) Front gauge (D) Back gauge

80. Nesting gauges are used whenever _____.
- (A) Progressive tool is used (B) Compound tool is used
(C) Stock strip is fed into the tool (D) Unit stock is fed into the tool
81. While bending, the neutral plane lies approximately at a distance of _____.
- (A) 0.3t to 0.5t from the inner surface
(B) 0.3t to 0.5t from the outer surface
(C) 0.5t to 0.6t from the inner surface
(D) 0.4t from the outer surface
82. All bends are distorted like forming. This distortion is called _____.
- (A) Elastic deformation (B) Plastic deformation
(C) Shearing (D) Planishing
83. If the blank diameter is 'D' and cup or shell diameter is 'd', then coefficient of drawing $K =$ _____.
- (A) $D - d$ (B) $D - d/2$ (C) d/D (D) D/d
84. The clearance between the walls of the drawing punch and the die should be _____.
- (A) Same as the thickness of the metal
(B) Less than the thickness of the metal
(C) Greater than the thickness of the metal
(D) Double the thickness of the metal
85. A smaller bend radius results _____.
- (A) No spring back (B) Heavier spring back
(C) Weaker spring back (D) No change in spring back
86. Why metal rupture or bottom break off in drawing ?
- (A) Blank holding pressure is too high
(B) Blank holding pressure is too weak
(C) Clearance is more
(D) Wrong blank dimension

87. Tool makes buttons are incorporate with :
- (A) Accurate locating (B) Precision turning
(C) Precision boring (D) Accurate clamping
88. _____ is basically a method of blanking or piercing parts without die break.
- (A) Shaving (B) Broaching (C) Piercing (D) Fine blanking
89. Maximum number of dowels used for positioning is _____.
- (A) 1 (B) 3 (C) 2 (D) 4
90. In drawing operation, more than one reduction will be necessary if the ratio of height of cup 'h' to the diameter of the cup 'd' (h/d) exceeds a value of _____.
- (A) 0.75 (B) 1.0 (C) 2.0 (D) 2.25
91. The maximum number of locating points in one plane should be _____ in order to prevent rocking.
- (A) 2 (B) 3 (C) 4 (D) 5
92. When the punch does not 'bottom out', the bending process are referred to as _____.
- (A) V bending (B) U bending (C) Air bending (D) Wiping
93. Spring back can be prevented in wiping dies by _____.
- (A) Over bending the material (B) Ironing the material
(C) Heating the material (D) None of the above
94. Bending along a curved axis is termed as :
- (A) U bending (B) Curved bending
(C) Drawing (D) Forming
95. If the load is heavy and end feeding is required, _____ die set is used.
- (A) Diagonal pin type (B) Four pillar type
(C) Center pin type (D) Back pin type

96. _____ causes the metal to begin flowing plastically.
(A) Die radius (B) Punch radius (C) Pressure pad (D) Draw ring
97. A blanked component weights 450 gms and is made from 1.5 mm thick plate material and whose weight per sq.cm is 1.7 gms. What is the blank diameter ?
(A) 19.54 cm (B) 18.36 cm (C) 16.46 cm (D) 15 cm
98. _____ is the connecting rod in a crank driven press.
(A) Ram (B) Clutch (C) Pitman (D) Crank
99. Double action presses are mainly used for _____.
(A) Drawing (B) Piercing (C) Blanking (D) Lancing
100. The locating system should be such that it would be difficult for the operator to load the workpiece incorrectly in a fixture. This is known as _____.
(A) Aligning (B) Locating (C) Clamping (D) Fool proofing

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SPACE FOR ROUGH WORK

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