

**009/2022**

Maximum : 100 marks

Time : 1 hour and 30 minutes

1. In linear indexing if the dividing head spindle and lead screw spindle are connected with gear ratio of 1:1 and lead screw of milling machine has a pitch 5 mm then one rotation of index crank move the table :  
(A) 0.0125 mm (B) 0.125 mm  
(C) 1.25 mm (D) 12.5 mm
2. Disadvantage of CNC machine :  
(A) Reduced scrap and rework (B) Reduced inspection time  
(C) High maintenance cost (D) All of the above
3. Standard marking on grinding wheel is 51-A46H5V8. The letter 'H' denotes :  
(A) Grit (B) Bond  
(C) Structure (D) Grade
4. In CNC turning centre, which type guide way that doesn't affected the alignment with spindle axis by wear and tear :  
(A) V - bed (B) Flat - bed  
(C) Cylindrical (D) Both (B) and (C)
5. Telescopic gauges are used to measure :  
(A) Holes below 12 mm  
(B) Shafts below 12 mm  
(C) Holes ranges from 12.7 mm to 152.4 mm  
(D) Shafts ranges from 12.7 mm to 152.4 mm
6. Tolerance obtained in cylindrical grinder is:  
(A) 0.0025 mm (B) 0.025 mm  
(C) 0.005 mm (D) 0.0005 mm

7. A left hand helix is to be cut if an operator standing in front of the machine facing the spindle of machine :
- (A) The table swiveled in a clockwise direction and spindle must be revolved in opposite direction to that of the gear on the lead screw
  - (B) The table swiveled in anti-clockwise direction and spindle must be revolved in opposite direction to that of gear on lead screw
  - (C) Table must be swiveled in clock wise direction and spindle and lead screw in same direction to that of gear on lead screw
  - (D) Table swiveled in anti-clockwise direction and spindle and lead screw in same direction to that of gear on lead screw
8. Ohm's law states that :
- (A)  $V \propto I/R$
  - (B)  $V \propto R/I$
  - (C)  $I \propto R/V$
  - (D)  $I \propto V/R$
9. Grade of grinding wheel of Hard bond refers range from :
- (A) A to H
  - (B) I to P
  - (C) Q to Z
  - (D) H to Q
10. Hydrostatic guideways in CNC means :
- (A) Oil lubricated slide way
  - (B) Air bearing slide way
  - (C) Both (A) and (B)
  - (D) Neither (A) nor (B)
11. Templates are used for :
- (A) Checking and marking profiles
  - (B) Checking only
  - (C) Measuring and checking
  - (D) Measuring only
12. In surface grinding machine, the crossfeed movement is obtained by moving of :
- (A) Crosswise movement of spindle head
  - (B) Crosswise movement of saddle
  - (C) Crosswise movement of wheel head
  - (D) Longitudinal movement of table or wheel head
13. For cutting involute rack teeth the cutter number used for required module is :
- (A) Cutter No: 8
  - (B) Cutter No: 5
  - (C) Cutter No: 2
  - (D) Cutter No: 1

14. Screw thread micrometer is used to measure :
- (A) Major or Outside Diameter (B) Minor Diameter  
(C) Effective Diameter (D) Core Diameter
15. In which type of slotting machine is provided horizontal movement in addition to vertical movement :
- (A) Precision tool slotter (B) Die slotting machine  
(C) Locomotive frame slotter (D) Travelling head type
16. Gears are used to connect shafts which are at an angle but not intersecting:
- (A) Hypoid gear (B) Mitre Gear  
(C) Bevel gear (D) Helical gear
17. The process of tempering the steel involves :
- (A) Reheating above  $400^{\circ}\text{C}$   $\rightarrow$  Soaking  $\rightarrow$  Rapid cooling  
(B) Heating  $30^{\circ}\text{C} - 50^{\circ}\text{C}$  above critical Temperature  $\rightarrow$  Soaking  $\rightarrow$  cooling in furnace itself  
(C) Reheating below  $400^{\circ}\text{C}$   $\rightarrow$  Soaking  $\rightarrow$  Cooling  
(D) Heating  $30^{\circ}\text{C} - 50^{\circ}\text{C}$  above critical Temperature  $\rightarrow$  Soaking  $\rightarrow$  Rapid cooling
18. Equation for differential indexing, if A is assumed number and N be the number of division :
- (A)  $A - N(40/N)$  (B)  $A - N(40/A)$   
(C)  $N - A(40/A)$  (D)  $N - A(40/N)$
19. Principle behind the step up transformer is :
- (A) Self induction (B) Dynamic induction  
(C) Mutual Induction (D) Eddy current
20. The code used to cancel cutter radius compensation :
- (A) G39 (B) G40  
(C) G41 (D) G42
21. The mechanism provided on rotary movement of table of slotting machine is :
- (A) Hypoid gear (B) Rack and pinion  
(C) Mitre gear drive (D) Worm and worm wheel

22. Control system in which no feedback is available :
- (A) Open loop (B) Closed loop  
(C) Short loop (D) Auto loop
23. Mechanical switching device which breaks the current under abnormal condition like short circuit :
- (A) Relay (B) MCB  
(C) LVDT (D) Fuse
24. For machining thin work piece which milling method is preferable :
- (A) Up milling (B) Conventional milling  
(C) Straddle milling (D) Down milling
25. The projecting part of cam which impart reciprocating motion to follower :
- (A) Lobe (B) Lead  
(C) Prime circle (D) Base circle
26. In angular indexing one rotation of index crank rotates the spindle :
- (A) 360 minute (B) 360°  
(C) 40 minute (D) 540 minute
27. Which type of drill jig is used for drilling thin or soft job :
- (A) Post jig (B) Sandwich jig  
(C) Box jig (D) Channel jig
28. Expanded form of MDI :
- (A) Manual Data Input (B) Machine data input  
(C) Main Data Input (D) Milling data input
29. Material used for sintered carbide cutters :
- (A) Tungsten carbide (B) Cobalt  
(C) Titanium carbide (D) All of the above
30. Letter which denotes Resinoid bond :
- (A) R (B) E  
(C) B (D) S

31. Which device is used for feedback in CNC control system?  
 (A) Control unit (B) Drive motor  
 (C) Decoder (D) Encoder
32. Example of natural abrasive :  
 (A) Corundum (B) Emery  
 (C) Both (A) and (B) (D) Neither (A) nor (B)
33. Working depth of two mating gear, if  $h_a$  = addendum height and  $h_f$  = dedendum height:  
 (A)  $2h_a$  (B)  $2h_f$   
 (C)  $h_a + h_f$  (D)  $2.125 h_f$
34. Ability of metal to withstand shock or impact :  
 (A) Tensile (B) Toughness  
 (C) Rupture (D) Malleability
35. In Universal milling machine the table can be swiveled in :  
 (A)  $15^\circ$  both direction (B)  $30^\circ$  both direction  
 (C)  $45^\circ$  both direction (D)  $60^\circ$  both direction
36. Lower Critical Temperature (LCT) and Upper Critical Temperature (UCT) of eutectoid steel is :  
 (A) LCT  $723^\circ\text{C}$  UCT  $723^\circ\text{C}$  (B) LCT  $723^\circ\text{C}$  UCT  $800^\circ\text{C}$   
 (C) LCT  $700^\circ\text{C}$  UCT  $900^\circ\text{C}$  (D) LCT  $950^\circ\text{C}$  UCT  $980^\circ\text{C}$
37. M code for program stop :  
 (A) M02 (B) M01  
 (C) M00 (D) M30
38. Shaping of grinding wheel to make it run concentric with axis is called :  
 (A) Dressing (B) Truing  
 (C) Both (A) and (B) (D) Neither (A) nor (B)
39. Which code is used for absolute programming?  
 (A) G90 (B) G91  
 (C) G92 (D) G40

40. In electrical installation the fuse are always connected to :
- (A) Neutral wire (B) Earth wire  
(C) Live wire (D) None of these
41. Wheel speed or surface speed of grinding wheel is expressed as :
- (A) m/sec (B) mm/sec  
(C) G92 (D) G40
42. Point to point control system are used for process like :
- (A) Profile milling (B) Contour milling  
(C) Drilling (D) Both (A) and (B)
43. The slotting tool does not have :
- (A) Side rake (B) Top rake  
(C) Front clearance (D) Relief angle
44. Effect of loading of grinding wheel :
- (A) Burning of ground surface (B) Wheel breakage  
(C) More heat generation (D) All of the above
45. Block number in a part program is represented by :
- (A) B word (B) N word  
(C) L word (D) G word
46. The element such as outside diameter, addendum, dedendum etc. in bevel gear are measured from :
- (A) Small end (B) Large end  
(C) Average of (A) and (B) (D) None of the above
47. The letter which indicates the inductance :
- (A) L (B) I  
(C) K (D) R
48. Longitudinal movement of slotting machine means :
- (A) Table is fed parallel to column  
(B) Table is fed perpendicular to column  
(C) Saddle is fed parallel to column  
(D) None of the above

49. Meaning of grit in grinding wheel :
- (A) Grade (B) Structure  
(C) Bond (D) Grain size
50. Driving mechanism used for transmission of motion at constant velocity ratio without creep and slippage :
- (A) Belt drive (B) Chain drive  
(C) Rope drive (D) Pulley and belt drive
51. G70P\_Q\_F\_; here P denotes
- (A) Program number (B) Pause block number  
(C) Part number (D) Starting block number
52. Meaning of G00 in CNC part program :
- (A) Linear interpolation (B) Rapid traverse  
(C) Dwell (D) Circular interpolation
53. Maximum permissible overall variation of form or position of feature :
- (A) Dimensional tolerance (B) Geometrical tolerance  
(C) Bilateral Tolerance (D) Fundamental deviation
54. Preparatory codes are also called :
- (A) M code (B) N code  
(C) P code (D) G code
55. Code for program reset and rewind :
- (A) M00 (B) M02  
(C) M05 (D) M30
56. What is the expanded form of ABC in first aid?
- (A) Airway, Blood and circulation  
(B) Aspiration, Blood and Circulation  
(C) Airway, Breathing and circulation  
(D) Aspiration, Breathing and Circulation
57. What is the standard colour used for identifying the Bin for the metal waste material?
- (A) Red (B) Blue  
(C) Green (D) Violet

58. The '5S' Concept of methodology for work place organization arises from which country:  
 (A) France (B) America  
 (C) Germany (D) Japan
59. Which safety practice refers, wear safety shoes or boots?  
 (A) Road safety (B) General safety  
 (C) Machine safety (D) Personnel safety
60. Which personnel protective equipment is used to maintain a good respiration?  
 (A) Safety glass (B) Mask  
 (C) Gown (D) Gloves
61. What is the point angle of drill for drilling cast iron?  
 (A) 120° (B) 140°  
 (C) 150° (D) 118°
62. Files are made from which material :  
 (A) High speed steel (B) High carbon steel  
 (C) Cast iron (D) Low alloy steel
63. What is the included angle of punch used for making light punch mark needed to position dividers and name the punch?  
 (A) 60° Prick punch (B) 60° Dot punch  
 (C) 30° Prick punch (D) 90° Centre punch
64. What is called the horizontal distance from a point on one thread form to the corresponding point on the adjacent thread measured parallel to the axis?  
 (A) Pitch of thread (B) Crest of thread  
 (C) Root of thread (D) Flank of thread
65. What is the body material of Bench Vice?  
 (A) Mild steel (B) Cast iron  
 (C) Wrought iron (D) Hardened steel
66. What type of work is done by Pedestal type Grinders?  
 (A) Light duty type (B) Medium duty type  
 (C) Heavy duty type (D) Extra heavy duty type

67. The extreme permissible sizes between which the actual size is contained and between which the component is made is named as :
- (A) Basic size (B) Size  
(C) Limit of size (D) Actual size
68. The difference between the maximum limit of size and minimum limit of size is named as :
- (A) Allowance (B) Interference  
(C) Tolerance (D) Clearance
69. Which material is used in the manufacture of anvil of the outside micrometer?
- (A) High carbon steel (B) Alloy steel  
(C) Cast iron (D) Low carbon steel
70. What is the least count of Vernier caliper in which 9 main scale divisions are divided into 10 equal parts in vernier scale?
- (A) 0.2 mm (B) 0.1 mm  
(C) 0.02 mm (D) 0.01 mm
71. The cutting speed recommended for drilling brass material in meters/minutes :
- (A) 70 to 100 (B) 20 to 35  
(C) 35 to 50 (D) 35 to 40
72. What types of tap wrench is used in restricted places?
- (A) Bar type tap wrench (B) T-Handled tap wrench  
(C) Solid type tap wrench (D) Double ended tap wrench
73. Which portion of Hammer head is not hardened or left soft?
- (A) Face (B) Pein  
(C) Cheek (D) Head
74. Which drilling machine is capable of drilling holes upto 12.5 mm?
- (A) Pillar drilling machine (B) Sensitive drilling machine  
(C) Column drilling machine (D) Radial drilling machine
75. The operation of beveling the end of drilled hole is called :
- (A) Counter boring (B) Spot facing  
(C) Countersinking (D) Step boring

76. Which mechanism in lathe machine is also called as reversing gear unit?  
(A) Change gear unit (B) Quick change gear box  
(C) Tumbler gear unit (D) Apron mechanism
77. What type of taper is provided on the shank of lathe centre?  
(A) Jarno Taper (B) Morse taper  
(C) Metric taper (D) Brown and sharp taper
78. What is the name of centre accommodated in main spindle sleeve?  
(A) Dead centre (B) Half centre  
(C) Revolving centre (D) Live Centre
79. Which part is assembled in compound rest other than compound slide?  
(A) Swivel base (B) Cross slide  
(C) Saddle (D) Apron
80. Which property of cutting tool is the amount of hardness possessed by a cutting tool at normal temperature?  
(A) Ductility (B) Red hardness  
(C) Toughness (D) Cold hardness
81. Which part of the lathe is locked while cutting taper by form tool method?  
(A) Compound rest (B) Carriage  
(C) Tail stock (D) Head stock
82. Which angle of cutting tool control the geometry of chip formation?  
(A) Cutting edge angle (B) Clearance angle  
(C) Relief angle (D) Rake angle
83. Which type of centre is used at the end of the job if no countersunk hole is permitted?  
(A) Insert type centre (B) Revolving centre  
(C) Female centre (D) Ball centre
84. What is the name of chuck that hardened steel sleeve having slit cut partially?  
(A) Combination chuck (B) Collet chuck  
(C) Magnetic chuck (D) Hydraulic chuck

85. Which mandrel is used for machining similar parts where internal diameter varies slightly?
- (A) Gang mandrel (B) Stepped mandrel  
(C) Taper shank mandrel (D) Expansion stud mandrel
86. What do you mean by ATC preparation of part programming axis convention of CNC Machine?
- (A) Alternate tool centre (B) Automatic tool changer  
(C) Automatic tool checking (D) Auxiliary tool checking
87. What is the meaning of open loop and closed loop in CNC Machine?
- (A) These both are programmable data  
(B) These both are two type of control system  
(C) These both are data collecting systems  
(D) These both are data storage systems
88. The representation of complex 3-D geometrics of the outer shell of the product is called :
- (A) 2-D Modeling (B) Solid modeling  
(C) 3-D Modeling (D) Surface modeling
89. What is the purpose of turret head on CNC Lathe machine?
- (A) It holds the work pieces  
(B) It hold the cutting tools  
(C) It support the lengthy work pieces  
(D) It guide the work pieces while thread cutting
90. Which one of the following code is suitable for grooving operation?
- (A) G17 (B) G18  
(C) G21 (D) G75
91. What is "T" in ISO standard for specifying tool insert TNMG 12048?
- (A) Diamond shaped (B) Triangular shaped  
(C) Square shaped (D) Rectangular shaped
92. What is the clearance angle for boring bar tool used in CNC Machine?
- (A) 5° (B) 7°  
(C) 8° (D) 9°

93. Which is the G-code suitable for thread cutting?  
(A) G-30 (B) G-32  
(C) G-34 (D) G-01
94. The Control loop unit of M.C.U is always :  
(A) A hardware unit (B) A software unit  
(C) A control unit (D) A drive unit
95. Point-to-point system used in CNC used for :  
(A) Reaming (B) Parting  
(C) Grooving (D) Facing
96. Which chart is used to record the skill of the operator in practice?  
(A) Testing chart (B) Leveling chart  
(C) Geometric chart (D) Performance chart
97. Which belong to total productive maintenance?  
(A) Supply defective goods to customers  
(B) Unscheduled maintenance  
(C) Producing goods without increasing product quality  
(D) Reduces maintenance cost
98. Which maintenance records mention the date of commissioning of machine?  
(A) Inspection check list (B) Equipment record  
(C) Product manual (D) Servicing manual
99. What is the use of dowel in assembly technique?  
(A) Accurate positioning of two or more parts  
(B) Securing components together  
(C) Eliminate the need for drilling  
(D) Increase the efficiency of fit
100. What is the name of activity carried out to prevent the breakdown of machinery in basic maintenance?  
(A) Routine maintenance (B) Preventive maintenance  
(C) Repairing activity (D) Inspection activity

**SPACE FOR ROUGH WORK**

**SPACE FOR ROUGH WORK**