

011/2022

Maximum : 100 marks

Time : 1 hour and 30 minutes

1. An Oily Floor Should be cleaned by?
(A) Cotton Waste (B) Putting Water
(C) Putting Sawdust (D) Spraying Carbon dioxide
2. What are the three factors causes Fire?
(A) Fuel, Light, Oxygen (B) Fuel, Nitrogen, Oxygen
(C) Heat, Nitrogen , Hydrogen (D) Fuel, Heat, Oxygen
3. While Grinding operation are to be carried out, Operator must wear?
(A) Mask (B) Safety Goggles
(C) Dark Glass screen (D) Apron
4. Colour code of Bins used in Workshop for segregation Paper is :
(A) Blue (B) Yellow
(C) Green (D) Red
5. What is the Class of Fire caused by Wood, Paper, Cloth?
(A) Class 'B' FIRE (B) Class 'D' FIRE
(C) Class 'A' FIRE (D) Class 'C' FIRE
6. Flammable liquid fire occurs, Which type Fire Extinguishers are most suitable :
(A) Water Filled Extinguishers (B) Form type Extinguishers
(C) Carbon Dioxide type Extinguishers (D) Dry Powder type Extinguishers
7. What 'A' denotes in ABC of FIRST AID?
(A) Attention (B) Anxiety
(C) Air way (D) Alert
8. In Method of Waste Disposal, the Process involves breaking down the materials into organic compounds that can be used as manure is :
(A) Composing (B) Land filling
(C) Recycling (D) Burning Waste Material

9. In Industry which one is not used for shifting/moving Heavy Equipment :
- (A) Crane and slings (B) Winches
(C) Conveyors (D) Layers and roller
10. The word means freedom or protection from harm, danger, hazard, risk, accident, injury or Damage is :
- (A) Accident (B) House keeping
(C) Guideline (D) Safety
11. The basic unit of Length in SI System is :
- (A) Metre (B) Centimetre
(C) Millimetre (D) Inches
12. 1μ means how much Millimetre :
- (A) 0.1 mm (B) 0.01 mm
(C) 0.0001 mm (D) 0.001 mm
13. Scribers are made out of which Material :
- (A) Tool Steel (B) High Carbon steel
(C) High Speed Steel (D) Spring Steel
14. The angle of the prick punch which is used for making light punch marks needed to position dividers are?
- (A) 90 degree (B) 120 degree
(C) 30 degree (D) 60 degree
15. Which precision measuring instrument is used for checking and setting of angles?
- (A) Bevel Protractor (B) Combination set
(C) Angle Gauge (D) Sine bar
16. The Vernier bevel protractor is a precision instrument meant for measuring angles to an accuracy of :
- (A) 5 minutes (B) 30 second
(C) 5 second (D) 0.5 minutes
17. The Name of the part of Vernier Height gauge, in which the main scales are graduated and various attachments may be clamped :
- (A) Base (B) Main Slide
(C) Beam (D) Finer adjusting slider

18. In industry/Workshop which grade Slip Gauge is used for inspection purposes?
- (A) Grade '0' accuracy (B) Grade '00' accuracy
(C) Grade I accuracy (D) Grade II accuracy
19. For Corrosion Protection and maintain surface finish clean the slips with carbon tetrachloride and apply :
- (A) Grease (B) Linen clothe
(C) Petroleum Jelly (D) Oil
20. The least count of Micrometer is :
- (A) 0.0001 mm (B) 0.01 mm
(C) 0.002 mm (D) 0.02 mm
21. Files are generally used for metal removing purpose, Which of the following statement is/are true about the constructional features of a Hand File :
- I. It is rectangular in cross section
II. Its edges are parallel around 66% of its length
III. One edge is uncut
IV. One face is uncut
- (A) I and II (B) II and III
(C) I and III (D) II and IV
22. Which one of the following hammer is used for nail pulling action?
- (A) Sledge Hammer (B) Claw Hammer
(C) Ball peen Hammer (D) Planishing Hammer
23. Which one of the following file is used for removing metal from a V shaped groove with an included angle of 50 degree?
- (A) Triangular File
(B) Flat File
(C) Hand File
(D) Knife edge File

24. Flute is the part of a drill bit, Which of the following statement is/are correct about flutes :
- I. Flutes helps to form the cutting edges
 - II. Flutes helps for chip removal process
 - III. Flutes helps for coolant flow
 - IV. Flutes Helps for improving strength of drill
- (A) II and III (B) III and IV
(C) I, II and III (D) II, III and IV
25. Which one of the material is generally used for making surface plates?
- (A) Grey cast iron (B) White cast iron
(C) Mild steel (D) Alloy steel
26. What is the Use of a Die Nut (Solid Die)?
- (A) For Cutting Internal Thread (B) For Cutting External Thread
(C) For cutting Threads in Nuts only (D) For Reconditioning Damaged threads
27. Which one of the following is a commercially available marking media with various colours and quick dry action?
- (A) Cellulose lacquer (B) White wash
(C) Copper sulphate (D) Prussian Blue
28. Vices are used for holding workpieces for various operations, which of the following Vice has only a Line contact occurs between work and jaw plate instead of surface contact?
- (A) Bench Vice (B) Leg Vice
(C) Tool makers Vice (D) Parallel jaw vice
29. Which type of limit gauge is suitable for checking the width of a rectangular prism?
- (A) Plug gauge (B) Ring gauge
(C) Progressive plug gauge (D) Snap gauge
30. Eye hole is part of hammer, What is the shape of an Eye hole?
- (A) It is a round straight hole
(B) It is an oval shaped straight hole
(C) It is a round tapered hole with an increase in diameter from centre towards its ends
(D) It is an oval shaped tapered hole with an increase in diameter from centre towards its ends

31. Which one of the following metal has the lowest melting point?
(A) High carbon steel (B) Medium carbon steel
(C) Low carbon steel (D) Tungsten
32. Which one of the following is a property of metal which fails under the action of constant tensile load at elevated temperature?
(A) Fatigue (B) Brittleness
(C) Elasticity (D) Creep
33. Which one of the following furnace is used for making Cast iron?
(A) Cupola Furnace (B) Blast Furnace
(C) Puddling Furnace (D) Open hearth furnace
34. Annealing is a Heat treatment process, In annealing what is the heating range of steel having 0.9% Carbon :
(A) 50 Degree below LCT (B) 50 Degree above LCT
(C) 50 Degree above UCT (D) 50 Degree below UCT
35. In arc welding process, which one of the following statement is true in case of straight polarity?
(A) 66% Heat is generated in work
(B) 66% Heat is generated in electrode
(C) Equal amount of heat is generated in electrode and work
(D) 100% Heat is generated in work
36. In Fillet weld nomenclature, What you mean by throat thickness?
(A) It is the distance between root of weld to the toe
(B) It is the distance between root of weld to the line joining two toes
(C) It is the distance between two toes
(D) It is the thickness of the base metal
37. Which one of the following rivet is used where the projection of the rivet head above the assembly surface must be avoided?
(A) Snap head rivet (B) Flat head rivet
(C) Countersunk head rivet (D) Pan head rivet

38. Which one of the following power source is used in arc welding where electricity is not available?
- (A) Generator set (B) Transformer set
(C) Rectifier set (D) Inverter Set
39. Which one of the following Heat treatment process is used for removing internal stresses developed due to uneven heating and cooling of metal?
- (A) Annealing (B) Hardening
(C) Tempering (D) Normalising
40. Which one of the following gas is used for Gas nitriding process?
- (A) Ammonia (B) Nitrogen
(C) Oxygen (D) Argon
41. Engines having spark ignition are governed by :
- (A) Hit and Miss Governing (B) Quantitative Governing
(C) Qualitative Governing (D) Both (B) and (C)
42. In a four stroke engine the working cycle is completed by _____ revolutions of crank shaft :
- (A) 1 (B) 2
(C) 4 (D) 3
43. The combustion process in a diesel engine is :
- (A) Constant Volume Process (B) Constant Temperature Process
(C) Adiabatic Process (D) Constant Pressure Process
44. What is the material used for making cam shaft?
- (A) Copper Alloy (B) Aluminium Alloy
(C) Forged Alloy Steel (D) Zinc Alloy
45. Piston and connecting rod joined by using :
- (A) Cam shaft (B) King Pin
(C) Gudgeon Pin (D) Rocket arm
46. What is the working principle of clutch?
- (A) Sliding (B) Centripetal
(C) Screw and Nut (D) Friction

47. What is the purpose of throttle valve in the carburettor?
(A) Control air fuel mixture into engine (B) Excess supply of fuel at idle
(C) Fitter the fuel (D) Always hold the correct fuel
48. Which one of the following is the working cycle of Compression Ignition Engine?
(A) Diesel Cycle (B) Otto Cycle
(C) Sterling Cycle (D) Rankine Cycle
49. What is the compression ratio of petrol engine?
(A) 10 : 1 to 18 : 1 (B) 8 : 1 to 15 : 1
(C) 6 : 1 to 11 : 1 (D) 15 : 1 to 20 : 1
50. Fresh charge in the cylinder of a two stroke engine enters in cylinder by :
(A) Exhaust Port (B) Transfer Port
(C) Inlet Port (D) Inlet Valve
51. Type of drive best suited for minimum distance and for maximum power Transmission is :
(A) Gear drive (B) Belt drive
(C) Rope drive (D) Chain drive
52. A key fits into a semi circular key way cut in the shaft is :
(A) Gib headed key (B) Feather key
(C) Woodruff key (D) Sunk key
53. Gears used to transmit power at right angles is :
(A) Spur Gear (B) Helical Gear
(C) Hynoid Gear (D) Mitre Gear
54. Example of an anti-friction bearing is :
(A) Journal Bearing (B) Ball Bearing
(C) Plummer Block (D) Pivot Bearing
55. Which of the following is an example for pin joint?
(A) Knuckle joint (B) Socket and Spigot joint
(C) Cotter joint (D) Expansion joint

56. If the bearing pressure (load) is parallel to the axis of the shaft the Bearing is called :
- (A) Journal Bearing (B) Pedestal Bearing
(C) Plummer Block (D) Pivot Bearing
57. Driver and Driven Pulley rotates in opposite direction in :
- (A) Open Belt drive (B) Cross Belt Drive
(C) Quarter twist drive (D) Jockey Pulley Drive
58. Bronze is an alloy of :
- (A) Copper and Zinc (B) Copper and Nickel
(C) Copper and Tin (D) Copper and Lead
59. The surface above the pitch circle diameter of a gear is called :
- (A) Face (B) Roof
(C) Depth (D) Pitch
60. The mechanism used in lathe for the movement of carriage is :
- (A) Worm and Worm Wheel (B) Bevel Gear
(C) Rack and Pinion (D) Helical Gear
61. Which one of the following is an example of Drive fit?
- (A) H7j6 (B) H7r6
(C) H7f6 (D) H7d8
62. The algebraic difference between a size to its corresponding basic size is known as :
- (A) Tolerance (B) Limit
(C) Deviation (D) Fit
63. The axial advancement of a nut on a bolt in one complete revolution is called :
- (A) Pitch (B) Lead
(C) Slope (D) Depth
64. The angle of seller's thread is :
- (A) 55° (B) 29°
(C) 47.5° (D) 60°
65. The combination of right hand and left hand thread is utilised in _____ of the following :
- (A) Stud (B) Turn Buckle
(C) Knuckle joint (D) Wing Nut

66. If the tolerance zones of mating parts overlaps the fit obtained is :
- (A) Clearance (B) Interference
(C) Transition (D) Shrink
67. A shaft of basic size 40 mm has its upper and lower deviations of 0.025 mm. Calculate the tolerance :
- (A) 0.05 (B) 0.005
(C) 0.5 (D) 0.025
68. In a triple start thread the lead equals :
- (A) three times of the pitch (B) one third of the pitch
(C) two third of the pitch (D) double of the pitch
69. The maximum and minimum sizes of shaft are 35.047 & 35.036 and that of Hole are 35.022 & 35.000 respectively. Calculate the minimum and maximum interferences when they are assembled :
- (A) 0.011 & 0.047 (B) 0.014 & 0.047
(C) 0.025 & 0.036 (D) 0.011 & 0.022
70. As per IS : 919–1963 (revised) BIS recommends _____ types of fundamental deviations and _____ grades of tolerances for basic size upto 500 mm :
- (A) 27 & 16 (B) 18 & 26
(C) 25 & 18 (D) 27 & 18
71. Electron has a _____ electric charge :
- (A) Positive (B) Negative
(C) No charge (D) None of the above
72. Unit of electric charge is :
- (A) Coulomb (B) Watts
(C) Ampere (D) Volt
73. Unit of conductance :
- (A) Ohm (B) Mho
(C) Ampere (D) No unit
74. Which one is semiconductor material?
- (A) Eureka (B) Ebonite
(C) Copper (D) Germanium

75. How many electrons are there in the third cell of the copper atom?
 (A) 2 (B) 1
 (C) 18 (D) 29
76. Full form of EMF is :
 (A) Electro Magnetic Force (B) Electro Motive Force
 (C) Electro Mechanical Force (D) Electric Magnitude Force
77. RMS value =
 (A) $V_{\max}/0.707$ (B) $V_{\max} \times 0.707$
 (C) $2 \times$ Peak value (D) Half of peak value
78. Copper is a/an :
 (A) Good conductor (B) alloy
 (C) Semiconductor (D) Insulator
79. An instrument which detect electric current is known as :
 (A) Volt meter (B) Rheostat
 (C) Watt meter (D) Galvanometer
80. Electric pressure is also called :
 (A) Resistance (B) Power
 (C) Voltage (D) Energy
81. Calculate the total power of the circuit of two lamps rated as 200 W/240 V are connected in series across 240V supply :
 (A) 50 W (B) 100 W
 (C) 200 W (D) 400 W
82. Which law states that in closed electric circuit, the applied voltage is equal to the sum of the voltage drops?
 (A) Ohm's law (B) Laws of resistance
 (C) Kirchhoff's first law (D) Kirchhoff's second law
83. What is the effect of the parallel circuit with one branch opened?
 (A) Current will remain same
 (B) Whole current will not function
 (C) No current will flow in that branch
 (D) Voltage drop increase in the opened branch

84. The total resistance in a series circuit is equal to the _____ of the individual resistances around the series circuit :
- (A) Sum (B) Reciprocal
(C) Product (D) Multiplication
85. Unit of resistance is :
- (A) ohm (B) Mho
(C) Volt (D) Ampere
86. Resistance of a wire is inversely proportional to its :
- (A) length (B) specific resistance
(C) cross sectional area (D) voltage
87. If the colour band on a resistor are in the order- Red, Green, Orange and Gold. Its resistance value is _____ Ω .
- (A) $27 \pm 5\%$ (B) $27000 \pm 10\%$
(C) $2700 \pm 20\%$ (D) $27000 \pm 5\%$
88. Which instrument used to measure resistance :
- (A) volt meter (B) ohm meter
(C) watt meter (D) tong tester
89. Which one of the following material/alloy is the best example of positive temperature coefficient?
- (A) Eureka (B) paper
(C) rubber (D) glass
90. Application of series parallel combination is :
- (A) Current divider (B) measuring current
(C) Measuring resistance (D) Voltage divider
91. Which of the following is a non-renewable energy source?
- (A) Nuclear (B) Wind
(C) Tide (D) Sun
92. Gasoline is a _____ fuel :
- (A) Solid (B) Liquid
(C) Gaseous (D) Nuclear

93. A generating station which utilizes the potential energy of water at a high level for the generation of electrical energy is known as :
- (A) Tidal power plant (B) Hydro power plant
(C) Nuclear power plant (D) Water heater
94. _____ turbines are used for high heads :
- (A) Reaction turbine (B) Francis turbines
(C) Kaplan turbines (D) Impulse turbines
95. In nuclear power station, heavy elements such as _____ are subjected to nuclear fission in a special apparatus known as a reactor :
- (A) Uranium (B) Silicon
(C) Carbon (D) Copper
96. Wind energy utilizes :
- (A) Potential energy of air (B) Kinetic energy of air
(C) Both (A) and (B) (D) None of these
97. A solar cell convert light energy into :
- (A) Electrical energy (B) Thermal energy
(C) Mechanical energy (D) Chemical energy
98. Series parallel combination of solar cell is called :
- (A) Solar sight (B) Solar light
(C) Solar array (D) Solar grouping
99. The main constituent of bio gas is :
- (A) Ethylene (B) Methane
(C) Hydrogen and oxygen (D) Hydrogen
100. Trapped heat inside the earth is known as :
- (A) Heat energy (B) Kinetic energy
(C) Geothermal energy (D) Thermal energy

SPACE FOR ROUGH WORK

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