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1. Which one of the following is not a good safety practice?
   - (A) Clean the hands with coolant fluid
   - (B) Wipe out split oil immediately
   - (C) Know everything about the machine before you start it
   - (D) Move with care in the workshop

2. Hard skills and technical skills are do not matter without :
   - (A) Positive attitude
   - (B) Problem solving skills
   - (C) Soft skills
   - (D) Good communication skills

3. Which time is the golden hours in the case of a medical emergency?
   - (A) First 15 minutes from the emergency
   - (B) First 30 minutes from the emergency
   - (C) First 1 hour from the emergency
   - (D) First 1.5 hours from the emergency

4. While using larger capacity fuse in a circuit :
   - (A) The fuse will blow out when load connected
   - (B) It will give more protection to the circuit
   - (C) The circuit will not work properly
   - (D) It will give no protection to the circuit

5. Which one of the following is you didn't do, when fire alarm sounds in your building?
   - (A) Evacuate to outside immediately
   - (B) Never use elevator
   - (C) Make fire ways clear
   - (D) Go back to workplace and work normally

6. SI unit of length is :
   - (A) Millimeter
   - (B) Feet
   - (C) Meter
   - (D) Yard

7. Steel rules are made from :
   - (A) Spring steel
   - (B) High speed steel
   - (C) High carbon steel
   - (D) Mild steel

A

3

8. Angle of the punch used for witness marking is :

    (A) 90°   (B) 60°

    (C) 30°   (D) 120°

9. In a single cut file the teeth are cut at an angle of ————————— to the center line.

    (A) 51°   (B) 60°

    (C) 70°   (D) 75°

10. For cutting cast iron, the hacksaw blade of ————————— Pitch is used.

    (A) 0.8 mm   (B) 1 mm

    (C) 1.4 mm   (D) 1.8 mm

11. How much is the least count of a vernier caliper, which have 20 divisions in vernier scale and it is equal to 19 main scale divisions. 1 MSD = 1 mm.

    (A) 0.05 mm   (B) 0.04 mm

    (C) 0.02 mm   (D) 0.01 mm

12. Pitch of the thread of an outside micrometer is :

    (A) 1 mm   (B) 0.5 mm

    (C) 0.01 mm   (D) 0.02 mm

13. Material used for making scriber is :

    (A) High carbon steel   (B) High speed steel

    (C) Medium carbon steel   (D) Cast iron

14. Which grade V-blocks are used for general machine shop work?

    (A) Grade D   (B) Grade C

    (C) Grade B   (D) Grade A

15. The part of the combination set which have no graduations and able to check 45° is :

    (A) Protractor head   (B) Centre head

    (C) Square head   (D) Bevel protractor

16. Which formula is used for calculating tap drill size that gives the full depth of the thread?

    (A) Tap size – 2 depth   (B) Tap size – pitch

    (C) Tap size – depth   (D) Tap size – 2 pitch

17. Which material is used for making surface plate?

    (A) Mild steel   (B) High carbon steel

    (C) Medium carbon steel   (D) Granite

18. Which one of the following marking media is available in different colour and dries very quickly?

(A) White wash   (B) Copper sulphate

(C) Prussian blue   (D) Cellulose lacquer

19. Name the tool used for enlarging by finishing previously drilled hole to accurate size :

(A) Drill   (B) Counter bore

(C) Reamer   (D) Counter sink

20. Which one of the following die is not used for cutting new thread?

(A) Button Die   (B) Die nut

(C) Adjustable screw plate die   (D) Half die

21. In a plunger type dial test indicator converting linear motion of the plunger into rotary motion of the pointer, mechanism used is :

(A) Rack and pinion mechanism   (B) Lever and scroll mechanism

(C) Winding mechanism   (D) Cam and follower mechanism

22. The maximum clearance between the hole $25 \begin{array}{l} + 0.020 \\ + 0.010 \end{array}$ and shaft $25 \begin{array}{l} - 0.025 \\ - 0.005 \end{array}$ is :

(A) −0.015   (B) 0.010

(C) 0.020   (D) 0.045

23. Interchangeability is normally applied for :

(A) Repairing of parts   (B) Mass production

(C) Preventive maintenance   (D) Single piece production

24. A basic hole is a hole whose lower deviation is zero, which one of the following letter indicate a basic hole :

(A) E   (B) H

(C) G   (D) F

25. IS:919 on limits and fits specifies following numbers of grade of fundamental tolerance and fundamental deviations respectively :

(A) 18, 25   (B) 25, 18

(C) 25, 16   (D) 18, 22

26. Smelting is the process of reduction of iron ore into :

(A) Cast iron   (B) Pig iron

(C) Wrought iron   (D) Gray cast iron

27. The property of a material which enables it to draw out into thin wire is :

(A) Malleability (B) Hardenability

(C) Ductility (D) Plasticity

28. 18-4-1 high speed steel is extensively used for lathe tools, 18-4-1 stands for :

(A) Tungsten - chromium - vanadium (B) Tungsten - chromium - cobalt

(C) Tungsten - cobalt - vanadium (D) Cobalt - chromium - vanadium

29. Case hardening is a method of producing hard skin on the surface of :

(A) High carbon steel parts (B) High speed steel parts

(C) Alloy steel parts (D) Low carbon steel parts

30. Tempering is done to reduce the :

(A) Critical temperature of the material

(B) Hardness of the material

(C) Ductility of the material

(D) Malleability of the material

31. On the top of the lathe bed there are two set of guide ways. The outer guide ways provide bearing and sliding surfaces for :

(A) Carriage (B) Tail stock

(C) Top slide (D) Cross slide

32. The thread on the screw rod of a tail stock is mostly :

(A) Right hand square thread (B) Left hand square thread

(C) Right hand acme thread (D) Left hand acme thread

33. A 'H' shaped casting that fix over the lathe bed :

(A) Cross slide (B) Carriage

(C) Saddle (D) Apron

34. Tumbler gears are used :

(A) To cut threads

(B) To reduce spindle speed

(C) To reverse spindle rotation

(D) To give desired direction of movement to lathe carriage

35. If the pitch of the thread to be cut is an exact multiple of the pitch of the lead screw, thread is called :

(A) Multi start thread (B) Single start thread

(C) Odd thread (D) Even thread

36. While turning taper using tail stock set over method, when tail stock is offsetting towards the operator the small diameter of the taper will be :

(A) At Head stock side (B) At Tail stock side

(C) At the middle of the job (D) At both ends

37. To get least count of 5' in vernier bevel protractor the 23° of main scale divisions are divided into :

(A) 25 equal parts on vernier scale (B) 22 equal parts on vernier scale

(C) 24 equal parts on vernier scale (D) 12 equal parts on vernier scale

38. What will be the result if carriage is not being locked during facing operation in a lathe?

(A) Pip at the center (B) Exact face

(C) Concave face (D) Convex face

39. Knurling is a ————— operation.

(A) Pressing (B) Shearing

(C) Forming (D) Turning

40. To prevent the chuck form damaging the lathe guide ways while mounting :

(A) Lift the chuck with a hand crane

(B) Support with screw jack

(C) Place a wooden block or board on the guide ways

(D) Mount it by power

41. Which mode is used to move the turret in micron level in Fanuc series CNC Machine?

(A) Jog mode (B) Incremental jog mode

(C) Edit mode (D) MDI mode

42. Which code is used for Rapid Traverse in CNC Machine?

(A) G01 (B) G00

(C) G02 (D) G03

43. Which code is used for Linear interpolation in CNC Machine?

(A) G10 (B) G41

(C) G01 (D) G50

44. Which code is used for grooving cycle in CNC Machine?

(A) G42 (B) G50

(C) G73 (D) G75

45. Which code is used to stop spindle rotation in CNC Machine?

(A) M00 (B) M01

(C) M05 (D) M03

46. Which code is used to start coolant supply on CNC Machine?

    (A) M03   (B) M05

    (C) M08   (D) M09

47. Which cycle is used in stock removal operation in CNC turning Fanuc series?

    (A) Canned cycle   (B) Finishing cycle

    (C) Turning cycle   (D) Facing cycle

48. A coordinate system used for machining a workpiece is normally referred as :

    (A) Machine coordinate system   (B) Axis orientation

    (C) Workpiece coordinate system   (D) Local coordinate system

49. By Axis designation CNC Lathes are classified into how many numbers :

    (A) 1   (B) 2

    (C) 3   (D) 4

50. Keep the machine clean comes under which safety :

    (A) General safety   (B) Machine safety

    (C) Personal safety   (D) Environmental safety

51. Silicon carbide grinding wheels are used to grind which materials :

    (A) Hard   (B) Soft

    (C) None of these   (D) Both (A) and (B)

52. Large diameter grinding wheels are made up of which bonding material :

    (A) Organic   (B) Vitrified

    (C) Silicate   (D) Sulphate

53. Grinding wheel marked as A16 P5 VBE, where 'V' represents :

    (A) Valence   (B) Vitrified

    (C) Resinoid   (D) Shellac

54. Whether the abrasive grains are held lightly or firmly is determined by :

    (A) Degree of bond   (B) Structure

    (C) Bond type   (D) Grade of bond

55. When a thin bridge of bond holds the abrassive grains together then the grinding wheel is called?

    (A) Thin wheel   (B) Thick wheel

    (C) Soft wheel   (D) Hard wheel

56. To grind soft materials which grinding wheel is used :

(A) Thick wheel   (B) Thin wheel

(C) Soft wheel   (D) Hard wheel

57. The spacing of abrassive grains in grinding wheel is called :

(A) Structure   (B) Bond type

(C) Grain size   (D) Degree of bond

58. Small particles of the material being ground become embedded in the space between the grains of grinding wheel creates defect and is called :

(A) Grooving   (B) Out of round

(C) Glazing   (D) Loading

59. Defect produced by grinding hard materials on a hard wheel is called :

(A) Glazing   (B) Grooving

(C) Out of round   (D) Loading

60. Which type of defect will be produced by using wrong type of grinding wheel for the material being ground?

(A) Loading   (B) Glazing

(C) Grooving   (D) Out of round

61. A single point cutting tool consists of a small tip of tool material attached to a steel shank by :

(A) brazing   (B) welding

(C) soldering   (D) reveting

62. What is known as the body portion of tipped tool?

(A) Point   (B) Bar

(C) Shank   (D) Solid

63. Which one of the following part is supports the milling machine table?

(A) Base   (B) Column

(C) Elevating screw   (D) Saddle

64. In a horizontal milling machine, the cutters are holded on :

(A) Arbor   (B) Shank

(C) Morse taper spindle   (D) Collet

65. What is termed as the rate at which the work is moved past the milling cutter?

(A) Speed   (B) Feed

(C) Time   (D) Depth

66. Which of the following is not a cutting tool material?

    (A)   High speed steel   (B)   Cemented Carbide

    (C)   Cast alloy   (D)   Cast iron

67. Slab milling operation is also known as :

    (A)   Plain milling   (B)   Side milling

    (C)   Form milling   (D)   Tread milling

68. What is known as the angle between the face of the blade and a line passing through the nose parallel to the side and face cutter axis?

    (A)   Radial rake angle   (B)   Face clearance angle

    (C)   Face relief angle   (D)   Axial rake angle

69. What is the other name of Up Milling operation?

    (A)   Conventional milling   (B)   Climb milling

    (C)   Face milling   (D)   Contour milling

70. What is the ratio between worm and worm wheel in simple indexing method?

    (A)   1 : 40   (B)   40 : 1

    (C)   1 : 20   (D)   20 : 1

71. Which type of energy used in EDM?

    (A)   Mechanical   (B)   Electro-chemical

    (C)   Thermo-electric   (D)   Chemical

72. What is the full form of EDM?

    (A)   Electro drafted manufacturing

    (B)   Electrical discharge machining

    (C)   Electrode discharge machining

    (D)   Engineering dimensional manufacturing

73. EDM operation is also known as :

    (A)   Spark emission   (B)   Space emission

    (C)   Space erosion   (D)   Spark erosion

74. In EDM, which terminal is connects the work?

    (A)   Anode   (B)   Earthing

    (C)   Cathode   (D)   Neutral

75. Which is the metal removal rate in EDM?

    (A)   Area of metal removal/unit time

    (B)   Area of metal removal/unit weight

    (C)   Volume of metal removal/unit time

    (D)   Volume of metal removal/unit weight

76. Which of the following factor is not connected to EDM process?

    (A)   Can not be employed hardened work piece

    (B)   Machining time are too long

    (C)   Eccessive tool wear

    (D)   Both (B) and (C)

77. Which of the following is not done the dielectric fluid while EDM process?

    (A)   Flush the particles from the gap

    (B)   Keep the electrode and work cool

    (C)   Prevent fusion of the electrode with the work

    (D)   Helps to reduce the time

78. Which mechanism is implanted to EDM for maintaining the spark gap while operation?

    (A)   Plunger mechanism   (B)   Screw mechanism

    (C)   Servo mechanism   (D)   Cam-track mechanism

79. In Wire EDM, which is the commonly used dielectric fluid?

    (A)   Kerosine   (B)   Deionized Water

    (C)   Soluble oil   (D)   All of these

80. Which of the following material is used to making electrode wire for TW-EDM?

    (A)   Graphite   (B)   Copper

    (C)   Mica   (D)   Iron

81. Which of the following viscosity indices shows the larger changes in viscosity with temperature?

    (A)   100   (B)   80

    (C)   35   (D)   15

82. What does the symbol of an oil pan typically represent on a vehicle's dashboard?

    (A)   Low coolant level   (B)   Engine oil pressure warning

    (C)   Transmission fluid level   (D)   Battery charge status

83. Match the following:

   (i)   Sludge formation   (1) Separate tank for oil storage to prevent oil starvation

   (ii) Piston blow-by gasses   (2) Driven by engine crankshaft

   (iii) Dry sump lubrication system (3) Condensation of water in the crankcase

   (iv) Crescent type gear pump   (4) Increase with engine speed

	(i)	(ii)	(iii)	(iv)
(A)	3	4	2	1
(B)	3	4	1	2
(C)	2	4	1	3
(D)	4	2	1	3

84. Match the following:

   (i)   Primary oil filter   (1) Petroil lubrication system

   (ii) Crankcase Ventilation   (2) Vane pump

   (iii) Continuous oil flow   (3) Suction side of oil pump

   (iv) Two-stroke engine   (4) Manifold suction system

	(i)	(ii)	(iii)	(iv)
(A)	4	3	2	1
(B)	3	1	2	4
(C)	3	4	2	1
(D)	3	2	4	1

85. In an overhead camshaft engine, the type of oil pump used is:

   (A) Rotor pump   (B) Vane pump

   (C) Plunger pump   (D) Crescent type oil pump

86. Which of the following statements are correct about excessive oil consumption?

   (i)   P C V valve stuck closed

   (ii) Defective valve seal

   (iii) Worn out valve stem and or guide

   (iv) The oil lines, galleries may be clogged

   (A) (i), (ii), (iii) and (iv)   (B) (ii), (iii) and (iv)

   (C) (i), (ii) and (iii)   (D) (i), (iii) and (iv)

87. In a 4S petrol engine, flywheel rotates at 1200 rpm, then the oil pump shaft rotates at:

(A) 1200 rpm

(B) 600 rpm

(C) 500 rpm

(D) 300 rpm

88. Which one of the following lubricating oils have higher viscosity and it is used in differential mechanism?

(A) S.A.E 10W30

(B) S.A.E 20W40

(C) S.A.E 90

(D) S.A.E 140

89. Match the following:

(i) Vane pump

(1) Spur or helical gear

(ii) Gear pump

(2) Splash lubrication system

(iii) Plunger pump

(3) Continuous oil flow

(iv) Rotor pump

(4) Compact and quieter running

	(i)	(ii)	(iii)	(iv)
(A)	4	1	2	3
(B)	3	1	4	2
(C)	2	4	3	1
(D)	3	1	2	4

90. Type of friction exists in piston rings and valve train:

(A) Solid friction

(B) Viscous friction

(C) Greasy friction

(D) All the above

91. In an engine cylinder contains gas under pressure of 11 bar is expanded then its volume increased by 10% of its initial volume, then the final pressure of gas at constant temperature is:

(A) 5 bar

(B) 9 bar

(C) 6 bar

(D) 10 bar

92. Which of the following statement (s) is (are) wrong?

(i) M.K.S unit of viscosity is $\dfrac{\text{one} - \text{kgf} - \text{sec}}{\text{m}^2}$

(ii) SI unit of kinematic viscosity is stoke

(iii) C.G.S unit of viscosity One poise = $\dfrac{\text{N.s}}{\text{m}^2}$

(iv) $\dfrac{\text{one N.s}}{\text{m}^2} = 10\,\text{poise}$

(A) Only (i) and (ii)

(B) Only (i), (ii) and (iv)

(C) Only (ii), (iii) and (iv)

(D) Only (ii) and (iii)

93. The viscous force in a liquid is due to:

    (A) Cohesive forces > Molecular momentum transfer

    (B) Cohesive forces ≥ Molecular momentum transfer

    (C) Cohesive forces < Molecular momentum transfer

    (D) Cohesive forces ≤ Molecular momentum transfer

94. Two pistons of a hydraulic lift have diameters of 36 cm and 6 cm. What is the force exerted by the larger piston when 60 N is placed on the smaller piston?

    (A) 2160N   (B) 1080N

    (C) 3240N   (D) 720N

95. Pascal's law states that pressure at a point is equal in all directions:

    (A) In a laminar flow   (B) In a turbulent flow

    (C) In a liquid at rest   (D) In a fluid at rest

96. Fluid statics deals with:

    (A) Gravity and pressure forces

    (B) Surface tension and gravity forces

    (C) Viscous and gravity forces

    (D) Viscous and pressure forces

97. Which valve is used to adjust the speed of an actuator in a pneumatic system?

    (A) Pressure Relief Valve   (B) Flow Control Valve

    (C) Directional Control Valve   (D) Check Valve

98. Bulk modulus of a fluid is the ratio of:

    (A) Critical velocity to the viscosity of fluid

    (B) Increase in pressure to the volumetric strain

    (C) Increase in volume to the viscosity of fluid

    (D) Shear stress to linear strain

99. The pressure at a point 10 m below the free surface of water is:

    (A) 9810 Pa   (B) 98.10 MPa

    (C) 981.0 kPa   (D) 98.10 kPa

100. In a 4/2 directional control valve, what do the numbers represent?

    (A) The number of positions and the number of ports

    (B) The maximum pressure and flow rate

    (C) The size of the valve and the temperature rating

    (D) The voltage rating and the current rating

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