

094/2022

Maximum : 100 marks

Time : 1 hour and 30 minutes

1. Match List I with List II :

List I	List II
Personal Protective Equipments	Equipment Used
1. Mask	(i) Protection Overalls front body
2. Aprons	(ii) Overhead Works
3. Safety belt	(iii) Respirator Protection

Choose the correct answer from the options given below :

(A) 1-(iii), 2-(ii), 3-(i)	(B) 1-(ii), 2-(i), 3-(iii)
(C) 1-(ii), 2-(iii), 3-(i)	(D) 1-(iii), 2-(i), 3-(ii)

2. Match List I with List II :

List I	List II
Class of fire	Types of fires
1. class "A"	(i) Combustibles metals such as Magnesium, Titanium and Potassium
2. class "B"	(ii) Flammable liquid such as gasoline, petroleum greases, tars, oil and oil-based paints
3. class "D"	(iii) Ordinary combustibles such as wood, paper, cloth and rubber

Choose the correct answer from the options given below :

- | | |
|----------------------------|----------------------------|
| (A) 1-(ii), 2-(i), 3-(iii) | (B) 1-(iii), 2-(ii), 3-(i) |
| (C) 1-(iii), 2-(i), 3-(ii) | (D) 1-(ii), 2-(iii), 3-(i) |

3. Why hacksaw blade is moved slowly at finishing of cut?

- (A) Damage hacksaw frame
- (B) Avoid job damage
- (C) Prevent breakage of blade
- (D) Improve cutting action

4. Which of the following statements are correct about the additional features of universal surface gauge?
- (i) Fixed upright, to which a scriber attached with a snug and clamp nut
 - (ii) The spindle can be set to any position
 - (iii) Fine adjustment can be made quickly
 - (iv) Consists of a heavy flat base and a spindle
- (A) Only (i) and (ii) (B) Only (ii) and (iii)
 (C) Only (iii) and (iv) (D) Only (ii) and (iv)
5. Which calliper is used to mark the centre of round bar?
- (A) Jenny calliper (B) Inside calliper
 (C) Outside calliper (D) Firm joint calliper
6. Match List I with List II :
- | List I | List II |
|-------------------------|--------------------------|
| Types of Vice | Features |
| 1. Quick releasing vice | (i) Screw is vertical |
| 2. Hand vice | (ii) Trigger |
| 3. Pipe vice | (iii) Hold small objects |
- Choose the correct answer from the options given below :
- (A) 1-(ii), 2-(i), 3-(iii) (B) 1-(i), 2-(ii), 3-(iii)
 (C) 1-(iii), 2-(i), 3-(ii) (D) 1-(ii), 2-(iii), 3-(i)
7. The narrow and thin part of a file which fits into the handle is called
- (A) Handle (B) Tang
 (C) Ferrule (D) Body
8. The tool used for tightening and dismantling of the G.I Pipes and fittings
- (A) Bench vice (B) Screw driver
 (C) Pipe vice (D) Pipe wrench
9. Which part in drilling machine is to achieve different speed?
- (A) Flat pulley (B) Jockey pulley
 (C) Stepped pulley (D) Fast and loose pulley
10. Which among the following pipes is bent by bench type hand operated pipe bender?
- (A) Copper pipe (B) Lead pipe
 (C) Conduit pipe (D) GI Pipe

11. Which property of metal is called mechanical property?
 (A) Conductivity (B) Specific gravity
 (C) Tenacity (D) Fusibility
12. Rust is formed from iron and which other element?
 (A) Hydrogen (B) Oxygen
 (C) Nitrogen (D) Sulphur
13. Which metals is most abundant in Earth's crust?
 (A) Calcium (B) Sodium
 (C) Aluminium (D) Iron
14. Muntz metal is an alloy of
 (A) Copper and Zinc (B) Copper and Tin
 (C) Copper and Aluminium (D) Copper and Nickel

15. Match List I with List II :

List I	List II
Various Fittings	Uses
1. Tee	(i) Used to connect four pipes at right angle to each other
2. Reducer	(ii) Used to branch off a pipe at right angle from the water supply line
3. Cross	(iii) Used to connect two pipes with different diameter

Choose the correct answer from the options given below :

- (A) 1-(ii), 2-(i), 3-(iii) (B) 1-(i), 2-(ii), 3-(iii)
 (C) 1-(iii), 2-(i), 3-(ii) (D) 1-(ii), 2-(iii), 3-(i)

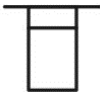
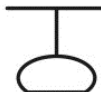

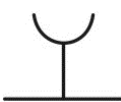
16. Match List I with List II :

List I	List II
Grades of Galvanised Iron pipe	Colour band
1. High Grade GI pipe	(i) Yellow band
2. Medium Grade GI pipe	(ii) Red band
3. Low Grade GI pipe	(iii) Blue Band

Choose the correct answer from the options given below :

- (A) 1-(i), 2-(ii), 3-(iii) (B) 1-(ii), 2-(iii), 3-(i)
 (C) 1-(iii), 2-(ii), 3-(i) (D) 1-(ii), 2-(i), 3-(iii)

17. What are the raw materials used for manufacturing of SW pipe?
 (A) Asbestos fibre, Portland cement and Silica
 (B) Good quality fibre
 (C) Good quality grey cast iron
 (D) Good quality Clay
18. What material is used to manufacture AC pipes?
 (A) Asbestos fibre, Clay, Lime
 (B) Asbestos fibre, Portland cement and Silica
 (C) Asbestos fibre, Lime and Cement
 (D) Asbestos fibre, Silica and Lime
19. Which type pipe fitting is used to connect a service pipe and a water main?
 (A) Coupling (B) Elbow
 (C) Ferrule (D) Reducer coupling
20. The enlarged end of a cast iron pipe is called
 (A) Lead (B) Socket
 (C) Hemp (D) Spigot end
21. Which is following surface sources of water?
 (A) River (B) Ponds
 (C) Lake (D) All of these
22. Water can be drawn from river bed from the following?
 (A) Intake wall (B) Spring
 (C) Ponds (D) Pit
23. Dead end system is called
 (A) Ring (B) Circle
 (C) Tree (D) Grid iron
24. Treated water is supplied to the consumers following system
 (A) Gravity (B) Pumping
 (C) Radial (D) (A) and (B)
25. Pure water is
 (A) Mirror colour (B) Colourless
 (C) White (D) Mug of lake

26. Which are the following are Physical test?
 (A) Odour (B) Chloride
 (C) Acidity (D) Turbo
27. What methods are used for removing permanent hardness?
 (A) Airation (B) Filtration
 (C) Lime soda (D) Zeolite lime
28. Reverse Osmosis is also known as
 (A) hyper filtration (B) hygenic filtration
 (C) santing (D) drop
29. Water has to be stored for non supply hours
 (A) continuous (B) Intermittent
 (C) pumping (D) ring
30. Polyvinyl Chloride is manufacture from
 (A) ethylene (B) carbon
 (C) plastic (D) acetylene gel
31. PVC is used for temperature below about
 (A) 100°F (B) 110°F
 (C) 50°F (D) 140°F
32. Which symbols is indicate W.C?
 (A)  (B) 
 (C)  (D) 
33. It is used to connect pipes of two different diameter by
 (A) Tee (B) Elbow
 (C) Socket (D) None of these
34. The Width of trench shall be outside diameter of pipe plus _____ cm.
 (A) 30 (B) 40
 (C) 50 (D) 20
35. Backfill _____ cm above the pipe shall be of fine sand or soft soil.
 (A) 10 (B) 15
 (C) 50 (D) 90

36. Sullage received trap is known as
 (A) WC trap (B) EWC trap
 (C) Running (D) Floor
37. _____ is provide to prevent the passage of foul gases.
 (A) Union (B) Scraper
 (C) Trap (D) Tee
38. _____ RCC bed concrete required for embedding the trap.
 (A) 1:3:6 (B) 2:2:3
 (C) 1:2:3 (D) As required
39. Purpose of pumps
 (A) To lift raw water (B) To lift sand
 (C) To boost pressure (D) (A) and (C)
40. The main components of a centrifugal pump
 (A) Impeller (B) Suction pipe
 (C) Casing (D) (A), (B) and (C)
41. _____ are used for measuring small flow of water.
 (A) Positive displacement type meter (B) Venturimeter
 (C) (A) and (B) (D) None of these
42. Water tank is constructed over airports necessary _____ light are to be fixed at top.
 (A) Yellow (B) LED
 (C) Red (D) Radar
43. Tank outlet pipes are fixed at _____ mm above the tank bottom level.
 (A) 50 (B) 100
 (C) 150 (D) 200
44. The function of the _____ is to stop or regulate the flow in a pipeline.
 (A) Post hydrant (B) Venturimeter
 (C) Tap (D) Valve
45. Check valves are also called _____ valves.
 (A) reflux valves (B) sluice valves
 (C) non-return valves (D) (A) and (C)

46. Colour cod of hot water supply lines
 (A) Red (B) Yellow
 (C) Green (D) Blue
47. To prevent under wastage of water _____ tap is used.
 (A) Self closing (B) Bib
 (C) Butterfly (D) Piller
48. Twin stage jet pumps are designed for suction lift of the order of _____ to _____ m.
 (A) 24 to 50 (B) 9 to 10
 (C) 50 to 60 (D) 18 to 22
49. The first step in the operation of a centrifugal pump is
 (A) Priming (B) Valve opening
 (C) Remove air (D) Switch on
50. Hot water taps are generally identified with red spot on _____ of tap.
 (A) Middle (B) Mouth
 (C) Top (D) (A) and (B)
51. The nut are used in temporary fastening which requires frequent removal and fixing
 (A) Cap nut (B) Wing nut
 (C) Round nut (D) Hexagonal nut
52. Example of permanent fastening is
 (A) Nut and Bolt (B) Keys
 (C) Welded joint (D) Screwed joint
53. This type of brazing, the base metal is heated to the required temperature by the application of the oxy acetylene flame.
 (A) Induction brazing (B) Dip brazing
 (C) Furnace brazing (D) Torch brazing
54. Lock nut system is used for
 (A) To avoid loosening by vibration (B) To avoid rusting
 (C) Easily tightening (D) Easy dismantling
55. This type of joint will have two rows of rivets. The overlap is large enough to accommodate two rows of rivets.
 (A) Single strap butt joint (B) Double strap butt joint
 (C) Single rivetted lap joint (D) Double rivetted lap joint

56. The process of joining metals using copper, zinc & tin alloy as filler material in which the base metal is heated above 420°C but below 850°C is called
- (A) Soldering (B) Soft soldering
(C) Brazing (D) Both (A) & (B)
57. Copper is the preferred material for soldering bit because
- (A) It is easy to maintain in serviceable condition
(B) Molten tin lead alloy easily adhere to it
(C) It is a very good conductor of heat
(D) All of the above
58. The normal capacity of storing acetylene in dissolved state is 6 m³ with the pressure ranging between
- (A) 120 – 150 kg/cm² (B) 120 – 160 kg/cm²
(C) 15 – 16 kg/cm² (D) 15 – 20 kg/cm²
59. This inorganic flux are known as killed spirits. It is mainly used for soldering copper, brass and tin sheets.
- (A) Hydrochloric acid (B) Zinc chloride
(C) Ammonium chloride (D) Phosphoric acid
60. Soft solder is the filler metals used in soldering have a melting point below
- (A) 427 Degree Celcius (B) 327 Degree Celcius
(C) 723 Degree Celcius (D) 983 Degree Celcius
61. In partially ventilated single stack system, the traps of the water closets are separately ventilated by a separate vent pipe called
- (A) Antisiphone pipe (B) Relief vent pipe
(C) Stack (D) Building drain vent
62. The straightness of the drain pipe can be tested by
- (A) Ball test (B) Smoke test
(C) Air test (D) Mirror test
63. The equipment required to conduct this test is drain plug/air bag stopper extrusion tubes, funnel and sight gauge
- (A) Smoke test (B) Chemical smell test
(C) Hydrostatic test (D) Pneumatic test
64. Septic tank is provided for
- (A) Settle sludge digestion (B) Setting of incoming sewage
(C) Storage of digested sledge (D) All of the above

65. A vertical pipe attached to a drain line that travels through the roof with no water running through it.
- (A) Air pipe (B) Vent pipe
(C) Antisiphone pipe (D) Waste pipe
66. The size of a branch ventilating pipe on a soil pipe should be not less than
- (A) 32 mm (B) 50 mm
(C) 75 mm (D) 100 mm
67. The main function of this pipe is to prevent water seal from being destroyed.
- (A) Vent cowl (B) Antisiphone pipe
(C) Suction pipe (D) Air pipe
68. The asbestos cement sewers are
- (A) Not structurally strong to bear large compressive screw
(B) Susceptible to corrosion by sulphuric acid
(C) Light in weight
(D) All of the above
69. When the bedding of sewer pipe, the centre line of sewers and their grades are transferred from the ground by means of
- (A) Ranging rod (B) Dumpy level
(C) Sight rail and boning rod (D) Theodolite
70. It is a water tight chamber constructed in any building drainage system which takes wastes from gully traps/soil pipes and disposes off
- (A) Inspection chamber (B) Drop man hole
(C) Septic tank (D) Soak pit
71. In the pipe line, which joint is commonly used in pumping station
- (A) Screwed joint (B) Flanged joint
(C) Expansion joint (D) Flexible joint
72. What is/are the materials used in screwed joints to make it water tight?
- (A) Rubber ring and collar (B) Hemp yarn and zinc paint
(C) Solvent cement (D) Nut and bolt
73. In the water supply pipeline, the expansion joint may be provided with
- (A) Rubber Collar (B) Fibber ring
(C) Insulated rubber sheet (D) Elastic rubber gasket

74. In the case of CI pipe joints, which options are correct
- I. Socket and spigot joint
 - II. Flanged joint
 - III. Collar joint
 - IV. Adhesive joint
- (A) I and II are correct (B) I and IV are correct
(C) II and III are correct (D) III and IV are correct
75. The slope provided for self-cleansing velocity to 100 mm diameter drain pipe
- (A) 1:20 (B) 1:30
(C) 1:40 (D) 1:50
76. The collar joint of asbestos cement pipe shall be finished off with a fillet sloping at what angle to the surface pipe
- (A) 30° (B) 45°
(C) 55° (D) 90°
77. The joint of pipe which are most suitable for carrying water lines over bridges where it has to bear vibrations
- (A) Dresser coupling joints (B) Flanged joints
(C) Caulked joint (D) Bell and spigot joint
78. Laying of PVC pipe the width of trench shall be outside diameter of pipe plus
- (A) 20 cm (B) 30 cm
(C) 35 cm (D) 40 cm
79. The ratio of cement mortar used for collar joint
- (A) 1:1 (B) 1:2
(C) 1:3 (D) 1:4
80. Before solvent cement applying, the inside of the fitting and outside of the pipe may be roughed with
- (A) Smooth file (B) Cotton waste
(C) Emery paper (D) knife – edge file
81. The tool which is used to lift and spread the mortar during masonry work
- (A) Spade (B) Shovel
(C) Trowel (D) Plank float

82. The portion of a brick obtained, after removing the triangular piece between the centre of one end and the centre of one side
- (A) King closer (B) Half brick bat
(C) Queen closer (D) Corner piece
83. An imaginary vertical line which includes the vertical joint separating two adjoining brick is called
- (A) Perpend (B) Bed
(C) Lap (D) Gap
84. The coarse aggregates, which cannot pass through the sieve
- (A) IS 450 (B) IS 480
(C) IS 420 (D) IS 400
85. The plaster of brick wall with cement mortar shall be kept wet for a period of
- (A) 3 days (B) 4 days
(C) 5 days (D) 7 days
86. In which bond, alternate course of header and stretcher are laid
- (A) Stretcher bond (B) Flemish bond
(C) Header bond (D) English bond
87. Scaffolding is mostly used for multi storied buildings
- (A) Tubular scaffolding (B) Ladder scaffolding
(C) Wooden scaffolding (D) Timber and rope scaffolding
88. Which device is used to determine consistency and initial/final set time of cement mortar?
- (A) Vicats needle apparatus (B) Slump testing machine
(C) Slump cone apparatus (D) Vertical needle apparatus
89. In single day the maximum height of masonry to be raised should not be more than
- (A) 1 meter (B) 1.5 meter
(C) 2 meter (D) 2.5 meter
90. Which of the following statement is true for first class brick?
- I. Minimum compressive strength 105 kg/cm^2
 II. Maximum water absorption after 24 hours Immersion is 20% by weight.
 III. Crushing strength not be less than 7 N/mm^2
- (A) I and III are correct (B) II only correct
(C) I and II are correct (D) All are correct
91. One calorie is how many joule
- (A) 4.681 (B) 2.186
(C) 2.681 (D) 4.186

92. In a cold and hot water mixing faucets, the hot water connection is given to
 (A) Right side of the user (B) Middle of the faucets
 (C) Left side of the user (D) Either side of the user
93. With reference to solar water heater what does 'ETC' means?
 (A) Elevated tube collector (B) Evacuated tube collector
 (C) Evaporated tube collector (D) Energy tube collector
94. Chimney's works based on principle of energy conservation which is also known as
 (A) Pascals law (B) Bernoulli's equations
 (C) Archemedes principle (D) Avagadro's law
95. What is the maximum temperature of hot water through solar water heater?
 (A) 40°C (B) 62°C
 (C) 70°C (D) 80°C
96. Benefits of 'Rain water harvesting'
 I. Reduce the salinity
 II. Produce grey water
 III. Avoid flooding
 IV. Ground water table rises
 (A) II, III and IV are correct (B) I, II and III are correct
 (C) I, III and IV are correct (D) All are correct
97. The quantity of heat required to rise the temperature of one gram of a substance through 1°C is called
 (A) Specific heat (B) Latent heat
 (C) Calorific value (D) Sensible heat
98. Convection occurs in
 (A) Liquid and gas (B) Liquid and solid
 (C) Gas and solid (D) Liquid only
99. Which of the following renewable source of energy?
 (A) Natural gas (B) Coal
 (C) Solar (D) Nuclear energy
100. Which instrument is used to measure the temperature of red hot metal radiations upto 3000 °C?
 (A) Hygrometer (B) Pyrometer
 (C) Hydrometer (D) Tetrameter

SPACE FOR ROUGH WORK

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