



**OFFICE OF THE ENGINEER-IN-CHIEF
PUBLIC HEALTH ENGINEERING DEPARTMENT
AIZAWL : MIZORAM**

**WRITTEN EXAMINATION : 2025
FOR THE POST OF**

**PUMP OPERATOR
(Regular)**

PAPER-III

Code No: _____
(For Official Use)

Signature of Invigilator

SUBJECT (Part)	MARKS OBTAINED
Technical/Specialised Subject (100x2=200 marks)	
Total Marks obtained (Full Marks-200)	

Signature of Examiner



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Roll No: _____
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Signature of Candidate

Signature of Invigilator

Instructions:

1. The question paper will also serve as the answer sheet. Candidates are required to answer directly on the question/answer sheet using Tick (✓) Marks.
2. Time : 3 Hours

PUMP OPERATOR PAPER-III (Technical Papers)

(Each question carry 2(two) marks, the total is 200 marks and all question carry equal mark)

1. Which is a chemical hazard?

(a) Noise

(b) Explosive

(c) Vibration

(d) Radiation

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2. What is the use of bench vice?

(a) To hold a workpiece

(b) To hold a tool

(c) To hold a work table

(d) To hold a chuck

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3. What is the purpose of chisel ?

(a) Grinding

(b) Machining

(c) Reaming

(d) Chipping

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4. Which is a Biological hazard ?

(a) Smoking

(b) Sickness

(c) Infection

(d) Poor discipline

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5. What is the treatment for burnt and scalded hands ?

(a) Blow hot air on the burnt hand

(b) Blow cool air on the burnt hand

(c) Wash burnt hand with cold water

(d) Wash burnt hand with hot water

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6. What is the purpose of mallets ?

(a) Riveting operation

(b) Strike on soft metal

(c) Chipping

(d) Cutting on steel

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7. Which instrument is used to measure the diameter of cam shaft journals ?

(a) Depth micrometer

(b) Three-point internal micrometer

(c) Inside micrometer

(d) Outside micrometer

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8. Which instrument is used to check the end-play of a crank shaft ?

(a) Dial test indicator

(b) Telescope gauge

(c) Bore dial gauge

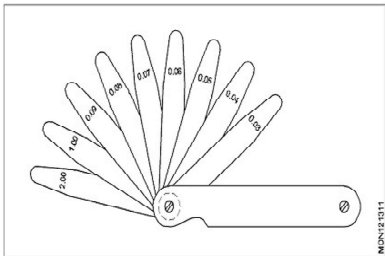
(d) Slip gauge

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9. What is the name of the gauge shown in the figure



(a) Feeler gauge

(b) Snap gauge

(c) Telescopic gauge

(d) Plug gauge

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10. What is the SI unit of length ?

(a) Feet

(b) cm

(c) Meter

(d) km

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11. Which material is used to make Allen keys

(a) Cast iron

(b) Aluminium alloy

(c) High speed steel

(d) Chrome vanadium steel

☐

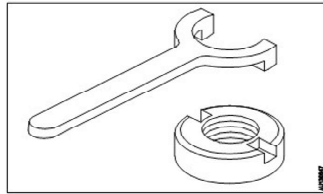
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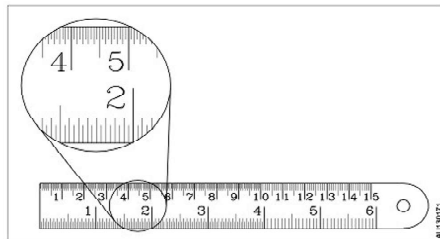
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- Recruitment of various posts under PHE Department : 2025 (Pump Operator) Paper-III

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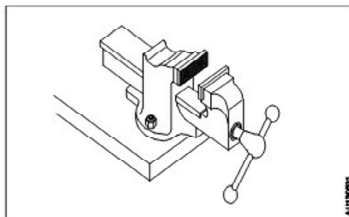
12. Which measuring instrument is used to measured the diameter of a piston pin ?
 (a) Depth micrometer ☐ (b) Inside micrometer ☐
 (c) Outside micrometer ☐ (d) Three point internal micrometer ☐
13. Which chisel is used for squaring material at the corners?
 (a) Flat chisel ☐ (b) Half round chisel ☐
 (c) Cross cut chisel ☐ (d) Diamond point chisel ☐
14. What is the purpose of an eye hole in the hammer ?
 (a) Strike the job ☐ (b) Fix the handle ☐
 (c) Reduce the weight ☐ (d) Stamp the details ☐
15. What is the name of the toll shown in the figure ?



- (a) Face wrench ☐ (b) Hook wrench ☐
 (c) Pin Wrench ☐ (d) Face pin wrench ☐
16. What is the least count of engineer's steel rule ?

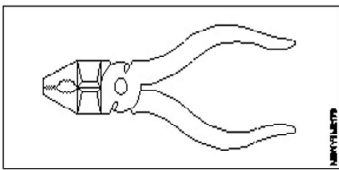


- (a) 1 mm ☐ (b) 0.5 mm ☐
 (c) 2 mm ☐ (d) 3 mm ☐
17. What is the name of the vice shown in figure ?



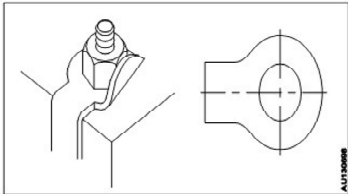
- (a) Pipe vice ☐ (b) Hand vice ☐
 (c) Pin vice ☐ (d) Bench vice ☐
18. What is to be checked with vacuum gauge ?
 (a) Leak in the cooling system ☐ (b) Leak in the air system ☐
 (c) Leak in the inlet-manifold system ☐ (d) Leak in the hydraulic brake system ☐
19. Which property of metal has its power of returning to its original shape after the applied force is released ?
 (a) Malleability ☐ (b) Tenacity ☐
 (c) Elasticity ☐ (d) Plasticity ☐
20. Which scraper is useful to the largerst bearings ?
 (a) Bull nose scraper ☐ (b) Tree square scraper ☐
 (c) Half round scraper ☐ (d) Flat scraper ☐
21. Which marking media dries very quickly ?
 (a) White wash ☐ (b) Cellulose lacquer ☐
 (c) Prussian blue ☐ (d) Copper sulphate ☐

22. What is the name of Plier show in figure



- | | | | |
|----------------------------|--------------------------|----------------------------|--------------------------|
| (a) Slip joint plier | ☐ | (b) Combination plier | ☐ |
| (c) Internal circlip plier | ☐ | (d) External circlip plier | ☐ |

23. What is the name of the washer shown in the figure ?



- | | | | |
|-------------------|--------------------------|-------------------------|--------------------------|
| (a) Plain washer | ☐ | (b) Tab washer | ☐ |
| (c) Spring washer | ☐ | (d) Toothed lock washer | ☐ |

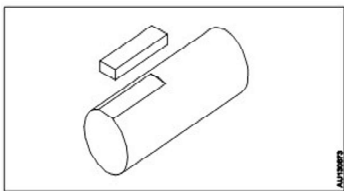
24. Which nut is used for structural and machine tool construction ?

- | | | | |
|----------------|--------------------------|-------------------|--------------------------|
| (a) Square nut | ☐ | (b) Hexagonal nut | ☐ |
| (c) Wing nut | ☐ | (d) Castle nut | ☐ |

25. Which nut is required to align the axle shaft hole and slot of the nut for locking ?

- | | | | |
|------------------------|--------------------------|-----------------------|--------------------------|
| (a) Castle nut | ☐ | (b) Flat saddle key | ☐ |
| (c) Circular taper key | ☐ | (d) Parallel sunk key | ☐ |

26. What is the name of the ey shown in the figure ?

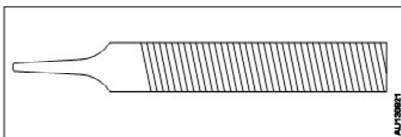


- | | | | |
|------------------------|--------------------------|-----------------------|--------------------------|
| (a) Hollow saddle key | ☐ | (b) Flat saddle key | ☐ |
| (c) Circular taper key | ☐ | (d) Parallel sunk key | ☐ |

27. Which locking device is used to retain the component on a shaft ?

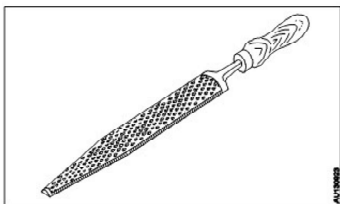
- | | | | |
|---------------|--------------------------|----------------------|--------------------------|
| (a) Slip pin | ☐ | (b) Wire lock | ☐ |
| (c) Check nut | ☐ | (d) External circlip | ☐ |

28. What is the name of the file shown in the figure ?



- | | | | |
|----------------|--------------------------|----------------|--------------------------|
| (a) Single cut | ☐ | (b) Double cut | ☐ |
| (c) Rasp cut | ☐ | (d) Curved cut | ☐ |

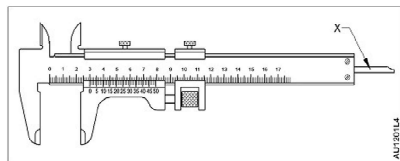
29. What is the name of the file shown in the figure



- | | | | |
|----------------|--------------------------|----------------|--------------------------|
| (a) Single cut | ☐ | (b) Double cut | ☐ |
| (c) Rasp cut | ☐ | (d) Curved cut | ☐ |

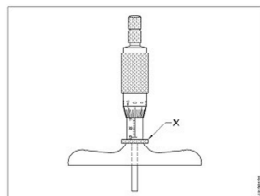
30. Which portable drilling machine has variable speed ?
 (a) Breast hand drill ☐ (b) Heavy duty electric hand drill ☐
 (c) Ratchet hand drill ☐ (d) Bevel gear hand drill ☐
31. Which part of a drill bit fits into the slot of the drilling machine spindle ?
 (a) Body ☐ (b) Tang ☐
 (c) Flute ☐ (d) Web ☐
32. Which material is used to make hand tap ?
 (a) Cast Iron ☐ (b) Low Carbon steel ☐
 (c) High Speed Steel ☐ (d) Stainless Steel ☐
33. Which angle helps in the penetration of the cutting edges in the material ?
 (a) Helix angle ☐ (b) Point angle ☐
 (c) Clearance angle ☐ (d) Web ☐
34. What should be done if an electric shock victim is unable to release his grip from the conductor ?
 (a) Turn off the power ☐
 (b) Cover all burns with a dry loose dressing ☐
 (c) Place the victim on one side with head down ☐
 (d) Ask a bystander to help you to move the victim ☐
35. Which occupational health hazard involves "Toxic" ?
 (a) Physical Hazard ☐ (b) Chemical Hazard ☐
 (c) Electrical Hazard ☐ (d) Mechanical Hazard ☐
36. Which safety involves wearing shoes in workshop ?
 (a) General safety ☐ (b) Personal safety ☐
 (c) Machine safety ☐ (d) Material safety ☐
37. What is the aim of first aid ?
 (a) Vaccination ☐ (b) Preserve life ☐
 (c) Prolong treatment ☐ (d) Prevent accident ☐
38. Which is the occupational mechanical hazard ?
 (a) Sickness ☐ (b) Current Leakage ☐
 (c) Unguarded machinery ☐ (d) Wrong layout of machinery ☐
39. Which type of personal protection is recommended to handle the loads with rough surfaces and pointed projections ?
 (a) Paper gloves ☐ (b) Rubber glove ☐
 (c) Leather gloves ☐ (d) Polythene glove ☐
40. Which PPE is used to prevent toxic fumes ?
 (a) Hand screen ☐ (b) Respiration pad ☐
 (c) Googles ☐ (d) Apron ☐
41. What is the benefits of 5S concept?
 (a) Increase the cost ☐ (b) Reduce absenteeism ☐
 (c) Prevent accident ☐ (d) Increase productivity ☐
42. What is the first aid for severe bleeding ?
 (a) Lower the injured body ☐ (b) Apply pressure to the wound ☐
 (c) Apply hot water ☐ (d) Rubbing with alcohol ☐

43. What is the name of the part marked as "X" shown in the figure ?



- | | | | |
|-------------------|--------------------------|---------------------------|--------------------------|
| (a) Beam | ☐ | (b) Fixed jaw | ☐ |
| (c) Vernier scale | ☐ | (d) Depth measuring blade | ☐ |

44. What is the name of the part marked as "X" shown in the figure ?



- | | | | |
|-----------|--------------------------|----------------------|--------------------------|
| (a) Cap | ☐ | (b) Lock | ☐ |
| (c) Stock | ☐ | (d) Graduated sleeve | ☐ |

45. Which is the least count of the metric outside micrometer ?

- | | | | |
|--------------|--------------------------|---------------|--------------------------|
| (a) 0.01mm | ☐ | (b) 0.10mm | ☐ |
| (c) 0.0001mm | ☐ | (d) 0.00001mm | ☐ |

46. Which part ensures uniform pressure on the measuring face in the outside micrometer?

- | | | | |
|-------------|--------------------------|------------------|--------------------------|
| (a) Barrel | ☐ | (b) Spindle | ☐ |
| (c) Thimble | ☐ | (d) Ratchet stop | ☐ |

47. What is the value of one thimble division reading in an outside micrometer?

- | | | | |
|------------|--------------------------|------------|--------------------------|
| (a) 0.05mm | ☐ | (b) 0.01mm | ☐ |
| (c) 0.02mm | ☐ | (d) 0.03mm | ☐ |

48. Which is measured by feeler gauge ?

- | | | | |
|-----------------------|--------------------------|------------------------------|--------------------------|
| (a) Radius | ☐ | (b) Screw pitch | ☐ |
| (c) Surface roughness | ☐ | (d) Gap between mating parts | ☐ |

49. Which marking media is used for a machine finished surface ?

- | | | | |
|-------------------|--------------------------|-------------------|--------------------------|
| (a) Carbon Powder | ☐ | (b) Prussian blue | ☐ |
| (c) Graphite | ☐ | (d) Grease | ☐ |

50. Which marking device is used to scribe circle ?

- | | | | |
|--------------------|--------------------------|---------------------|--------------------------|
| (a) Jenny caliper | ☐ | (b) Inside caliper | ☐ |
| (c) Spring divider | ☐ | (d) Outside caliper | ☐ |

51. What is the recommended gap between tool post and grinding wheel ?

- | | | | |
|----------|--------------------------|----------|--------------------------|
| (a) 1mm | ☐ | (b) 2 mm | ☐ |
| (c) 3 mm | ☐ | (d) 4 mm | ☐ |

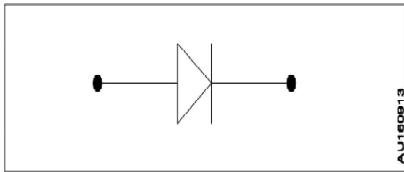
52. What is the energy conversion of battery during charging?

- | | |
|--|--------------------------|
| (a) Electrical energy into chemical energy | ☐ |
| (b) Electrical energy into heat energy | ☐ |
| (c) Chemical energy into electrical energy | ☐ |
| (d) Electrical energy into mechanical energy | ☐ |

53. What acid is used in the lead acid battery?

- | | | | |
|----------------------|--------------------------|-----------------------|--------------------------|
| (a) Nitric acid | ☐ | (b) Sulphuric acid | ☐ |
| (c) Hydrobromic acid | ☐ | (d) Hydrochloric acid | ☐ |

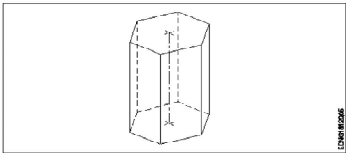
54. What is the name of the Electronic Symbol ?



- | | | | |
|-------------|--------------------------|----------------|--------------------------|
| (a) Diode | ☐ | (b) Switch | ☐ |
| (c) Battery | ☐ | (d) Transistor | ☐ |
55. What is the name of Electron Flow Movement ?
- | | | | |
|-------------|--------------------------|----------------|--------------------------|
| (a) Current | ☐ | (b) Power | ☐ |
| (c) Voltage | ☐ | (d) Resistance | ☐ |
56. What law states that “The current is directly proportional to the voltage and inversely proportional to resistance “ ?
- | | | | |
|-----------------|--------------------------|------------------|--------------------------|
| (a) Ohm’s Law | ☐ | (b) Hook’s Law | ☐ |
| (c) Boyle’s Law | ☐ | (d) Newton’s Law | ☐ |
57. What is the S.I unit of heat ?
- | | | | |
|--------------------------|--------------------------|---------------------------|--------------------------|
| (a) Calorie | ☐ | (b) Joule | ☐ |
| (c) Centigrade heat unit | ☐ | (d) Bristish thermal unit | ☐ |
58. What is the value for spectific heat of water ?
- | | | | |
|-------|--------------------------|-------|--------------------------|
| (a) 4 | ☐ | (b) 3 | ☐ |
| (c) 2 | ☐ | (d) 1 | ☐ |
59. What is the boiling point of water?
- | | | | |
|-----------|--------------------------|-----------|--------------------------|
| (a) 0°C | ☐ | (b) 32°C | ☐ |
| (c) 100°C | ☐ | (d) 212°C | ☐ |
60. Which is the unit of current ?
- | | | | |
|------------|--------------------------|----------|--------------------------|
| (a) Ampere | ☐ | (b) Volt | ☐ |
| (c) Ohm | ☐ | (d) Watt | ☐ |
61. Which is very good conductor ?
- | | | | |
|------------------|--------------------------|---------------|--------------------------|
| (a) Copper | ☐ | (b) Casi Iron | ☐ |
| (c) Wrought Iron | ☐ | (d) Steel | ☐ |
62. What is the side of a square whose area is 625mm²?
- | | | | |
|----------|--------------------------|----------|--------------------------|
| (a) 15mm | ☐ | (b) 20mm | ☐ |
| (c) 25mm | ☐ | (d) 30mm | ☐ |
63. Which metal is widely used for making casting of machinery parts?
- | | | | |
|-------------------------|--------------------------|---------------------|--------------------------|
| (a) Grey cast iron | ☐ | (b) White cast iron | ☐ |
| (c) Malleable cast iron | ☐ | (d) Wrought iron | ☐ |
64. What is termed as the quantity of metter contained in a body?
- | | | | |
|-------------|--------------------------|----------------------|--------------------------|
| (a) Density | ☐ | (b) Volume | ☐ |
| (c) Mass | ☐ | (d) Specific Gravity | ☐ |
65. What is called mass per unit volume of a substances ?
- | | | | |
|-------------|--------------------------|------------|--------------------------|
| (a) Mass | ☐ | (b) Weight | ☐ |
| (c) Density | ☐ | (d) Volume | ☐ |
66. What is the unit of speed ?
- | | | | |
|------------------|--------------------------|-------------------------------|--------------------------|
| a) Meter/second | ☐ | (b) Meter/second ² | ☐ |
| (c) Meter/minute | ☐ | (d) Meter/hour | ☐ |
67. What is the ratio of power output to power input ?
- | | | | |
|----------------|--------------------------|------------------|--------------------------|
| (a) Work | ☐ | (b) Energy | ☐ |
| (c) Efficiency | ☐ | (d) Acceleration | ☐ |

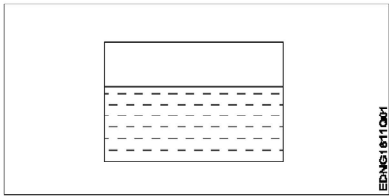
68. What are the two classifications of system of units?
 (a) British and Metric ☐ (b) Gravitational and non-gravitational ☐
 (c) Fundamental and derived ☐ (d) Metric and International ☐
69. What are fundamental units?
 (a) Length, Mass, Volume ☐ (b) Length, Mass Time ☐
 (c) Length, Mass, Area ☐ (d) Length, Pressure, Volume ☐
70. What denotes letter 'M' in MKS system
 (a) Mile ☐ (b) Meter ☐
 (c) Millimeter ☐ (d) Micron ☐
71. What is the square root of 529
 (a) 13 ☐ (b) 23 ☐
 (c) 33 ☐ (d) 43 ☐
72. Convert 0.456 decimal fraction into percentage?
 (a) 45.6% ☐ (b) 4.56% ☐
 (c) 0.456% ☐ (d) 0.0456% ☐
73. Which metal contains iron as a major content?
 (a) Brass metal ☐ (b) Bronze metal ☐
 (c) Zinc ☐ (d) Ferrous metal ☐
74. Identify the conventional symbol of material
-
- (a) Lead ☐ (b) Steel ☐
 (c) Glass ☐ (d) Porcelain ☐
75. Identify the name of tool?
-
- (a) Try Square ☐ (b) Surface Gauge ☐
 (c) Steel Rule ☐ (d) Feeler Gauge ☐
76. Identify the conventional symbol of material?
-
- (a) Steel ☐ (b) Wood ☐
 (c) Glass ☐ (d) Concrete ☐
77. What is the trimmed size of A4 sheet?
 (a) 841 x 1189 ☐ (b) 594 x 841 ☐
 (c) 210 x 297 ☐ (d) 148 x 210 ☐

78. Identidy the name of prism ?



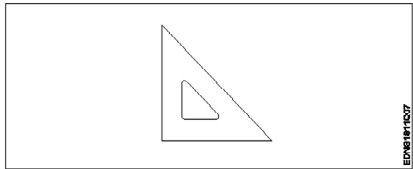
- | | | | |
|----------------------|--------------------------|----------------------|--------------------------|
| (a) Square prism | ☐ | (b) Pentagonal prism | ☐ |
| (c) Triangular prism | ☐ | (d) Hexagonal prism | ☐ |

79. Identify the conventional symbol of material ?



- | | | | |
|--------------|--------------------------|--------------|--------------------------|
| (a) Water | ☐ | (b) Concrete | ☐ |
| (c) Asbestos | ☐ | (d) Glass | ☐ |

80. Identify the name of set square?



- | | | | |
|--------------------------------|--------------------------|--------------------------------|--------------------------|
| (a) 15 ⁰ set square | ☐ | (b) 60 ⁰ set square | ☐ |
| (c) 30 ⁰ set square | ☐ | (d) 45 ⁰ set square | ☐ |

81. Low level language is also called _____.

- | | | | |
|----------------------|--------------------------|-----------------------|--------------------------|
| (a) Source code | ☐ | (b) Middle ware | ☐ |
| (c) Machine language | ☐ | (d) Assembly language | ☐ |

82. Pronunciation refers to _____.

- | | | | |
|-----------------|--------------------------|-------------------------|--------------------------|
| (a) dipthong | ☐ | (b) consonant | ☐ |
| (c) punctuation | ☐ | (d) production of sound | ☐ |

83. Rise and fall of pitch of voice is called _____.

- | | | | |
|---------------|--------------------------|-------------------|--------------------------|
| (a) Vowel | ☐ | (b) Intonation | ☐ |
| (c) Consonant | ☐ | (d) Pronunciation | ☐ |

84. The word that expresses a sudden and strong feeling is called _____.

- | | | | |
|-----------------|--------------------------|------------------|--------------------------|
| (a) punctuation | ☐ | (b) interjection | ☐ |
| (c) conjunction | ☐ | (d) apostrophe | ☐ |

85. Which one is a “Do’s” of discussion etiquettes?

- | | | | |
|-----------------------------------|--------------------------|-----------------------------------|--------------------------|
| (a) Loose yourn temper | ☐ | (b) Listen to others | ☐ |
| (c) Talk about irrelevant details | ☐ | (d) Use impolite or rude language | ☐ |

86. Which one is a ‘Don’t” of discussion etiquettes?

- | | | | |
|----------------------|--------------------------|-----------------------|--------------------------|
| (a) Be open minded | ☐ | (b) Use moderate tone | ☐ |
| (c) Listen to others | ☐ | (d) Argue unnecessary | ☐ |

87. Which one is a brain of computer?

- | | | | |
|--------------|--------------------------|---------------|--------------------------|
| (a) Keyboard | ☐ | (b) CPU | ☐ |
| (c) Monitor | ☐ | (d) Hard disk | ☐ |

88. Which one is NOT a benefit of the role playing?

- | | | | |
|---|--------------------------|------------------------------|--------------------------|
| (a) Builds confidence | ☐ | (b) Develops listening skill | ☐ |
| (c) Develops creative problem-solving skill | ☐ | (d) Develops boredom | ☐ |

89. To be in a job or work is____
 (a) Employ ☐ (b) Skill ☐
 (c) Knowledge ☐ (d) Aptitude ☐
90. Jobs that have become outdated in the past 5 years____
 (a) STD booth ☐ (b) ola ☐
 (c) uber ☐ (d) swiggy ☐
91. Ethics means
 (a) decide what is right and wrong for a human conduct ☐
 (b) name of a city ☐
 (c) employability skills ☐
 (d) not relevant to society ☐
92. Values are ____
 (a) not punctual ☐ (b) motivates our attitude and action ☐
 (c) very costly ☐ (d) all have same value ☐
93. ____ is a brief statement about purpose and principles of the Constitution.
 (a) Syllabus ☐ (b) Module ☐
 (c) The Preamble ☐ (d) Unit ☐
94. Identify the improper term ____
 (a) Green pollution ☐ (b) Water pollution ☐
 (c) Air pollution ☐ (d) Sound pollution ☐
95. NAPS Stand for ____
 (a) National Apprenticeship Promotion Scheme ☐
 (b) National Appointment Promoting Scheme ☐
 (c) Non-Apprenticeship Promotion Scheme ☐
 (d) National Advertising Promotion Scheme ☐
96. ____ is major changes takes place in manufacturing.
 (a) Green revolution ☐ (b) Industry revolution ☐
 (c) Water revolution ☐ (d) Soil revolution ☐
97. 1st industrial revolution started in ____
 (a) 18th century ☐ (b) 19th century ☐
 (c) 20th century ☐ (d) 21st century ☐
98. A resume should be _____.
 (a) Short and precise ☐
 (b) Fancy and colourful ☐
 (c) Having long and detailed information ☐
 (d) Having acronyms and abbreviation ☐
99. A written description of duties responsibilities to be carried out in a job is called ____
 (a) CV ☐ (b) Job description ☐
 (c) Resume ☐ (d) Job application ☐
100. Curriculum vitae is also known as ____?
 (a) Circular ☐ (b) Resume ☐
 (c) Job application form ☐ (d) Leave application ☐