

GOVERNMENT OF MIZORAM
POWER & ELECTRICITY DEPARTMENT

COMBINED COMPETITIVE EXAMINATION FOR
RECRUITMENT TO DIFFERENT TECHNICAL POSTS
(AUGUST-2026)

PAPER-III
(FITTER)

Full Marks : 200
Time Allowed : 3 Hours

Signature of Invigilator _____

CODE :

(For official use)

SUBJECT	MARK CARRIED BY EACH QUESTION / TOPIC	NO. OF CORRECT ANSWERS	MARKS OBTAINED
Fitter	2		
TOTAL			

Signature of Examiner : _____

GOVERNMENT OF MIZORAM
POWER & ELECTRICITY DEPARTMENT

COMBINED COMPETITIVE EXAMINATION FOR
RECRUITMENT TO DIFFERENT TECHNICAL POSTS
(AUGUST-2026)

PAPER-III
(FITTER)

Full Marks : 200
Time Allowed : 3 Hours

Roll No. : _____

Signature of Invigilator _____

CODE :

(For official use)

All questions carry 2 marks.

Put a tick (✓) mark against the correct answer in the space given in each question.

If a candidate gives more than one answer to one question, it will be treated as wrong answer even if one of the given answers happens to be correct.

FITTER - 200 MARKS

1. The standard SI unit of linear measurement is:
 - (a) Inch ()
 - (b) Foot ()
 - (c) **Metre** ()
 - (d) Yard ()
2. A pair of inside calipers is used to measure:
 - (a) External diameter of a shaft ()
 - (b) **Internal diameter of a hole** ()
 - (c) Length of a job ()
 - (d) Thickness of a plate ()
3. The main purpose of a bench vice in fitting work is to:
 - (a) Store tools safely ()
 - (b) **Hold work firmly during operations** ()
 - (c) Support measuring instruments ()
 - (d) Guide drilling operations ()
4. Hacksaw blades for cutting metals are generally made from:
 - (a) Mild steel ()
 - (b) Cast iron ()
 - (c) **High carbon steel** ()
 - (d) Copper alloy ()
5. The pitch of a hacksaw blade is defined as:
 - (a) Thickness of the blade ()
 - (b) Width of the blade ()
 - (c) **Number of teeth per unit length** ()
 - (d) Length of the blade ()
6. The ability of a metal to be drawn into wire is called:
 - (a) Malleability ()
 - (b) **Ductility** ()
 - (c) Toughness ()
 - (d) Hardness ()
7. The property of a material to resist indentation or scratching is:
 - (a) Toughness ()
 - (b) Elasticity ()
 - (c) **Hardness** ()
 - (d) Brittleness ()

8. The least count of a typical metric outside micrometer (0–25 mm) is:
- (a) **0.01 mm** ()
 - (b) 0.02 mm ()
 - (c) 0.05 mm ()
 - (d) 0.1 mm ()
9. The part of the micrometer that carries the graduations on the barrel is called the:
- (a) Thimble ()
 - (b) Anvil ()
 - (c) Spindle ()
 - (d) **Sleeve** ()
10. A vernier caliper can be used to measure:
- (a) Only external diameters ()
 - (b) Only internal diameters ()
 - (c) Only depth ()
 - (d) **External, internal dimensions and depth** ()
11. A bench drilling machine is primarily used for:
- (a) Large workpieces only ()
 - (b) **Small to medium jobs in a workshop** ()
 - (c) Only reaming operations ()
 - (d) Gear cutting ()
12. The column of a pillar drilling machine is mounted on the:
- (a) **Base** ()
 - (b) Table ()
 - (c) Spindle ()
 - (d) Chuck ()
13. A radial drilling machine is best suited for:
- (a) Small precision work only ()
 - (b) **Large and heavy workpieces** ()
 - (c) Cutting external threads ()
 - (d) Internal grinding ()
14. In a gang drilling machine:
- (a) **Several spindles are mounted on a single table** ()
 - (b) Many workpieces are drilled in one setting on separate machines ()
 - (c) One spindle is used with multiple chucks ()
 - (d) Only one hole can be drilled at a time ()
15. The main advantage of a multiple spindle drilling machine is:
- (a) Very high spindle speed ()
 - (b) No need of coolant ()
 - (c) Easy portability ()
 - (d) **Ability to drill several holes simultaneously** ()

16. Sheet metal gauge indicates:

- (a) Type of material ()
- (b) Thickness of the sheet** ()
- (c) Length of the sheet ()
- (d) Width of the sheet ()

17. Galvanised sheets are steel sheets coated with:

- (a) Tin ()
- (b) Aluminium ()
- (c) Lead ()
- (d) Zinc** ()

18. The most important personal protective equipment during sheet metal cutting is:

- (a) Safety shoes only ()
- (b) Leather apron only ()
- (c) Safety goggles or face shield** ()
- (d) Cotton gloves only ()

19. What is the purpose of a pilot hole in drilling operations?:

- (a) To finish the hole ()
- (b) To guide the larger drill** ()
- (c) To thread the hole ()
- (d) To countersink the hole ()

20. Commercial sheet sizes and thicknesses are standardised mainly according to:

- (a) BIS/IS specifications** ()
- (b) Local workshop practice ()
- (c) Customer choice only ()
- (d) Tool room standards only ()

21. Soft solder is generally an alloy of:

- (a) Tin and lead** ()
- (b) Copper and zinc ()
- (c) Iron and carbon ()
- (d) Aluminium and silicon ()

22. The main function of flux in soldering is to:

- (a) Increase melting point of solder ()
- (b) Remove oxides and improve wetting** ()
- (c) Harden the joint ()
- (d) Increase joint thickness ()

23. Brazing is a process of joining metals using filler metal with:

- (a) Melting point lower than 450°C ()
- (b) Melting point above the base metal ()
- (c) Melting point above 450°C but below base metal** ()
- (d) Exactly same melting point as base metal ()

24. In gas welding, the fuel gas commonly used with oxygen is:
- (a) Nitrogen ()
 - (b) Hydrogen ()
 - (c) **Acetylene** ()
 - (d) Helium ()
25. A welding transformer converts:
- (a) AC to DC at same voltage ()
 - (b) **High voltage, low current AC to low voltage, high current AC** ()
 - (c) DC to AC for welding ()
 - (d) Low voltage DC to high voltage DC ()
26. A welding generator generally supplies:
- (a) Low current AC ()
 - (b) High voltage DC ()
 - (c) **Low voltage, high current DC** ()
 - (d) High voltage, low current AC ()
27. In a gas welding blowpipe, the purpose of the mixer is to:
- (a) Filter gases ()
 - (b) **Mix oxygen and fuel gas in correct proportion** ()
 - (c) Increase cylinder pressure ()
 - (d) Cool the flame ()
28. Butt joint in welding is formed when:
- (a) **Plates are placed edge to edge in same plane** ()
 - (b) Plates overlap each other ()
 - (c) Plates are arranged at right angles ()
 - (d) One plate is placed on another ()
29. Fillet weld is generally used for:
- (a) Edge joints only ()
 - (b) Corner joints only ()
 - (c) Butt joints only ()
 - (d) **Lap and tee joints** ()
30. High-pressure (H.P.) gas welding equipment uses:
- (a) High pressure fuel gas, low pressure oxygen ()
 - (b) **High pressure oxygen and fuel gas** ()
 - (c) Low pressure gases only ()
 - (d) Air and acetylene at atmospheric pressure ()
31. In manual metal arc welding, the coating on the electrode mainly:
- (a) Increases electrode length ()
 - (b) Cools the weld pool ()
 - (c) Reduces current ()
 - (d) **Forms protective gas and slag** ()

32. The current and voltage for arc welding is usually:
- (a) **High current and low voltage** ()
 - (b) Very low current and high voltage ()
 - (c) High current and high voltage ()
 - (d) Low current and low voltage ()
33. Electrodes for arc welding must be stored:
- (a) In open air ()
 - (b) In oil ()
 - (c) Under water ()
 - (d) **In a dry place, often heated oven for low-hydrogen types** ()
34. During oxy-acetylene gas cutting, the main function of oxygen is to:
- (a) Cool the work ()
 - (b) Act only as shielding gas ()
 - (c) **Support rapid oxidation of metal** ()
 - (d) Prevent oxidation ()
35. The cutting torch differs from the welding torch mainly by having:
- (a) Only one gas inlet ()
 - (b) **Additional oxygen jet for cutting** ()
 - (c) No nozzle ()
 - (d) Only fuel gas supply ()
36. A taper shank drill is held in the spindle by:
- (a) Chuck only ()
 - (b) Set screw ()
 - (c) **Self-holding taper fit** ()
 - (d) Key and keyway ()
37. A straight shank drill is usually mounted in:
- (a) Morse taper socket directly ()
 - (b) Collet chuck only ()
 - (c) **Drill chuck** ()
 - (d) Between centres ()
38. A countersink tool is used to:
- (a) Enlarge the entire length of a hole ()
 - (b) **Produce a conical seat for screw heads** ()
 - (c) Produce a flat-bottomed hole ()
 - (d) Drill blind holes ()
39. Counter boring operation is done to:
- (a) Reduce diameter of hole ()
 - (b) Make tapered holes ()
 - (c) **Produce enlarged flat-bottom recess at top of hole** ()
 - (d) Improve surface finish only ()

40. Spot facing is used to:
- (a) Reduce depth of hole ()
 - (b) **Provide a smooth, flat seating surface around a hole** ()
 - (c) Make countersunk holes ()
 - (d) Make the hole oval ()
41. Before drilling a hole accurately at a marked location, which tool is commonly used?
- (a) Cold chisel ()
 - (b) **Centre punch** ()
 - (c) File ()
 - (d) Reamer ()
42. Which operation is performed after drilling to improve the accuracy and finish of a hole?
- (a) Chipping ()
 - (b) Filing ()
 - (c) **Reaming** ()
 - (d) Punching ()
43. A grinding wheel with a soft grade is preferred for:
- (a) **Hard materials** ()
 - (b) Soft materials ()
 - (c) Plastics only ()
 - (d) Wood only ()
44. Dressing of a grinding wheel is done to:
- (a) Increase its diameter ()
 - (b) Make it harder ()
 - (c) **Restore its cutting ability and correct shape** ()
 - (d) Change its grade ()
45. Bench grinding machine is mainly used for:
- (a) Milling operations ()
 - (b) Turning operations ()
 - (c) **Tool sharpening and light grinding work** ()
 - (d) Boring operations ()
46. Pig iron is generally produced in a:
- (a) Cupola furnace ()
 - (b) **Blast furnace** ()
 - (c) Open hearth furnace ()
 - (d) Electric arc furnace ()
47. Cast iron is comparatively:
- (a) More ductile and less brittle than mild steel ()
 - (b) Completely non-magnetic ()
 - (c) Same ductility as mild steel ()
 - (d) **More brittle and less ductile than mild steel** ()

48. Wrought iron is characterised by:
- (a) High carbon content ()
 - (b) Very low carbon content and high ductility** ()
 - (c) High alloy content ()
 - (d) Extremely brittle structure ()
49. Copper is mainly used in electrical industry because of :
- (a) High hardness ()
 - (b) Excellent electrical conductivity** ()
 - (c) High brittleness ()
 - (d) Low melting point ()
50. Aluminium alloys are preferred in aircraft structures mainly due to:
- (a) Extremely high density ()
 - (b) Magnetic property ()
 - (c) Very low corrosion resistance ()
 - (d) High strength-to-weight ratio** ()
51. A vernier micrometer combines:
- (a) Vernier scale with an ordinary micrometer barrel** ()
 - (b) Vernier scale with a steel rule ()
 - (c) Vernier caliper and steel square ()
 - (d) Vernier caliper with thread gauge ()
52. The main function of a dial test indicator (DTI) is to:
- (a) Measure length directly between two points ()
 - (b) Check small deviations like run-out and alignment** ()
 - (c) Measure temperature ()
 - (d) Measure weight of components ()
53. Mechanical fasteners are generally used to:
- (a) Form detachable joints between components** ()
 - (b) Make permanent joints only ()
 - (c) Replace welding in all cases ()
 - (d) Reduce machining time ()
54. Brass is an alloy of:
- (a) Copper and tin ()
 - (b) Aluminium and magnesium ()
 - (c) Iron and carbon ()
 - (d) Copper and zinc** ()
55. Phosphor bronze is commonly used for:
- (a) Structural beams ()
 - (b) Electrical contacts and springs** ()
 - (c) Concrete reinforcement ()
 - (d) Cutting tools ()

56. A single-point cutting tool is generally used on:
- (a) **Lathe** ()
 - (b) Drill press ()
 - (c) Shaper only ()
 - (d) Bench grinder only ()
57. The rake angle of a cutting tool is provided mainly to:
- (a) Increase tool weight ()
 - (b) **Reduce cutting force and improve chip flow** ()
 - (c) Decrease tool life ()
 - (d) Make tool more brittle ()
58. Compared with H.S.S. tools, carbide tools generally permit:
- (a) **Higher cutting speeds** ()
 - (b) Lower cutting speeds ()
 - (c) No change in cutting speed ()
 - (d) Zero cutting speed ()
59. Square thread form is most suitable for:
- (a) General fastening ()
 - (b) **Power transmission such as screw jacks** ()
 - (c) Sheet metal screws ()
 - (d) Wood screws ()
60. Which lathe operation is used to reduce the diameter of a cylindrical workpiece?
- (a) Knurling ()
 - (b) Facing ()
 - (c) **Turning** ()
 - (d) Drilling ()
61. The main advantage of a torque wrench is that it:
- (a) Tightens any nut without force ()
 - (b) **Indicates and controls the tightening torque** ()
 - (c) Measures temperature ()
 - (d) Measures thread pitch ()
62. Property class marking on bolts indicates:
- (a) Type of thread only ()
 - (b) Surface finish ()
 - (c) Length of bolt ()
 - (d) **Mechanical strength of bolt** ()
63. A power drill is classified as a power tool because it is:
- (a) **Driven by electric or pneumatic power** ()
 - (b) Always hand-operated without power ()
 - (c) Used only for grinding ()
 - (d) Used only in large industries ()

64. A castle nut requires which additional component for locking?
- (a) Lock washer only ()
 - (b) Split pin (cotter pin) through a drilled bolt** ()
 - (c) Rivet ()
 - (d) Spring washer only ()
65. A grooved nut is locked on the bolt mainly by:
- (a) Jamming two nuts together ()
 - (b) Using adhesive ()
 - (c) Welding it permanently ()
 - (d) Using a key or tab engaging the groove** ()
66. The main purpose of normalizing steel is to:
- (a) Soften it to maximum extent ()
 - (b) Refine grain structure and relieve internal stresses** ()
 - (c) Increase brittleness ()
 - (d) Decrease toughness ()
67. Annealing is primarily carried out to:
- (a) Harden the steel ()
 - (b) Produce martensite ()
 - (c) Increase internal stresses ()
 - (d) Soften the steel and improve machinability** ()
68. Hardening of steel is generally followed by:
- (a) Normal cooling in air ()
 - (b) Cooling in furnace only ()
 - (c) Rapid quenching and then tempering** ()
 - (d) No further treatment ()
69. Case hardening is mainly applied to:
- (a) Obtain hard core and soft surface ()
 - (b) Obtain hard surface with tough core** ()
 - (c) Make entire section soft ()
 - (d) Make entire section brittle ()
70. Carburising is a process of:
- (a) Adding carbon to the surface layer of low-carbon steel** ()
 - (b) Removing carbon from surface ()
 - (c) Adding sulphur to surface ()
 - (d) Removing all impurities ()
71. A journal bearing supports:
- (a) Thrust load only ()
 - (b) Radial load only** ()
 - (c) Both radial and thrust loads ()
 - (d) No load ()

72. Ball bearings are preferred over plain bearings mainly because they:
- (a) Have higher friction ()
 - (b) Require no lubrication ()
 - (c) **Have lower friction and can run at higher speeds** ()
 - (d) Cannot take any thrust load ()
73. Double-row ball bearings compared to single-row ball bearings:
- (a) Carry lesser load ()
 - (b) **Carry higher load in same space** ()
 - (c) Are only for decorative use ()
 - (d) Cannot be used for radial load ()
74. Standard pipe threads are generally:
- (a) Square threads ()
 - (b) Buttress threads ()
 - (c) **Tapered or parallel threads suitable for sealing** ()
 - (d) Non-standard rounded threads only ()
75. A pipe bending fixture is used to:
- (a) Cut the pipe ()
 - (b) **Bend the pipe to desired angle without excessive flattening** ()
 - (c) Weld two pipes ()
 - (d) Thread the pipe ()
76. The main object of a belt in power transmission is to:
- (a) Reduce speed only ()
 - (b) Act as a brake ()
 - (c) Store kinetic energy ()
 - (d) **Transmit power between two shafts** ()
77. Flat belts are generally used for:
- (a) **Long-distance, moderate power transmission** ()
 - (b) Short distances only ()
 - (c) Very high power in compact space ()
 - (d) Only as conveyor belts ()
78. V-belts have better grip than flat belts mainly due to:
- (a) Lower coefficient of friction ()
 - (b) **Wedge action in the groove** ()
 - (c) Smooth contact surface ()
 - (d) Use of lubricants ()
79. Belt creep in power transmission refers to:
- (a) **Belt slipping due to difference in tension on tight and slack sides** ()
 - (b) Breaking of belt ()
 - (c) Stretching beyond elastic limit only ()
 - (d) Belt becoming shorter ()

80. A split pulley is used mainly to:
- (a) Reduce pulley weight ()
 - (b) Facilitate mounting on existing shafts without dismantling** ()
 - (c) Increase belt speed ()
 - (d) Eliminate keyways ()
81. Chain drive compared to belt drive:
- (a) Does not slip and maintains constant speed ratio** ()
 - (b) Slips more ()
 - (c) Cannot transmit high power ()
 - (d) Needs no lubrication ()
82. Wire ropes are generally used for:
- (a) Very short-distance drives only ()
 - (b) Long-distance, heavy-load lifting and transmission** ()
 - (c) Internal gear drives ()
 - (d) Precision instruments only ()
83. Spur gears are used when:
- (a) Axes of shafts are parallel** ()
 - (b) Axes of shafts intersect ()
 - (c) Axes are at right angles and non-intersecting ()
 - (d) No power transmission is required ()
84. Bevel gears are used to transmit motion between shafts that are:
- (a) Parallel ()
 - (b) Perpendicular and intersecting** ()
 - (c) Coaxial ()
 - (d) Non-intersecting and parallel ()
85. A rack and pinion is used to convert:
- (a) Rotary motion to rotary motion ()
 - (b) No motion ()
 - (c) Linear motion to linear motion ()
 - (d) Rotary motion to linear motion** ()
86. Pneumatic systems generally use:
- (a) Water under pressure ()
 - (b) Oil under pressure ()
 - (c) Compressed air or gas** ()
 - (d) Steam only ()
87. Hydraulic systems commonly use:
- (a) Compressed air only ()
 - (b) Oil as working fluid** ()
 - (c) Water vapour ()
 - (d) Solid lubricants ()

88. According to Pascal's law, pressure applied to a confined fluid:

- (a) Acts only at the point of application ()
- (b) Is transmitted equally in all directions** ()
- (c) Disappears at the walls ()
- (d) Acts only upward ()

89. Boyle's law relates:

- (a) Pressure and volume of a gas at constant temperature** ()
- (b) Pressure and temperature at constant volume ()
- (c) Volume and temperature at constant pressure ()
- (d) Flow and velocity ()

90. A pressure relief valve in a hydraulic system is used to:

- (a) Increase pressure beyond limit ()
- (b) Maintain pressure below a set safe value** ()
- (c) Measure flow ()
- (d) Filter oil ()

91. A gear pump in a hydraulic system is classified as a:

- (a) Dynamic (centrifugal) pump ()
- (b) Positive displacement pump** ()
- (c) Jet pump ()
- (d) Vacuum pump ()

92. A hydraulic cylinder converts:

- (a) Fluid power into linear mechanical motion** ()
- (b) Fluid power into rotary motion ()
- (c) Electrical energy into fluid power ()
- (d) Heat into electricity ()

93. A hydraulic motor converts:

- (a) Linear motion into fluid flow ()
- (b) Fluid power into rotary mechanical motion** ()
- (c) Fluid power into linear motion ()
- (d) Electrical power into heat ()

94. In a meter-in speed control circuit, the flow control valve is placed in:

- (a) Return line from actuator ()
- (b) Pressure line before directional valve ()
- (c) Supply line to actuator** ()
- (d) Tank line ()

95. An electro-pneumatic valve is one that is:

- (a) Operated purely manually ()
- (b) Operated by hydraulic pressure only ()
- (c) Actuated electrically but controls air flow** ()
- (d) Operated by springs only ()

96. The main purpose of lubrication between moving parts is to:

- (a) Increase friction ()
- (b) Reduce friction and wear** ()
- (c) Increase temperature ()
- (d) Reduce strength ()

97. Viscosity of a lubricant is a measure of its:

- (a) Colour ()
- (b) Density ()
- (c) Resistance to flow** ()
- (d) Flash point ()

98. In splash lubrication system, oil is:

- (a) Forced by pump through pipes ()
- (b) Sprayed by hand ()
- (c) Splashed by rotating parts into bearings** ()
- (d) Supplied only once during assembly ()

99. A Lewis cotter foundation bolt is used for:

- (a) Temporary light structures only ()
- (b) Fixing heavy machinery to foundations** ()
- (c) Fixing sheet metal parts ()
- (d) Holding gears on shafts ()

100. A sling is used during handling of heavy machinery to:

- (a) Measure weight ()
- (b) Support and lift loads safely with cranes or hoists** ()
- (c) Increase machine speed ()
- (d) Reduce noise ()

* * * * *