

GOVERNMENT OF MIZORAM
POWER & ELECTRICITY DEPARTMENT

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

PAPER-III
(MECHANIC)

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
Mechanic	2		
TOTAL			

Signature of Examiner : _____

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All questions carry 2 marks each.

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.

MECHANIC - 200 MARKS

1. The process of locating points and drawing required line on metal is:
 - (a) Welding ()
 - (b) Sawing ()
 - (c) Chiselling ()
 - (d) **Marking out** ()
2. Which marking medium is best suited for filed or machine finished surfaces?
 - (a) White powder ()
 - (b) **Prussian blue** ()
 - (c) Sand ()
 - (d) Lime water ()
3. What is the main disadvantage of using prussian blue?
 - (a) **It takes more time to dry** ()
 - (b) Unclear lines ()
 - (c) Danger to skin ()
 - (d) Cannot be used in flat plate ()
4. Which marking media is used in rough forging?
 - (a) **Chalk powder** ()
 - (b) Ball pen ()
 - (c) Pencil ()
 - (d) Clear water ()
5. Which tool is specifically used to remove heavy, loose layer of rust and stubborn deposit from rough surface?
 - (a) Flat file ()
 - (b) **Wire brush** ()
 - (c) Water ()
 - (d) Leaves ()
6. Emery paper is defined as a paper coated with:
 - (a) Graphite ()
 - (b) Lubricant ()
 - (c) Oil ()
 - (d) **Abrasive particles** ()

7. What is the least count of standard metric steel rule?
(a) 10 inches ()
(b) 100 cm ()
(c) **0.5 mm** ()
(d) 10 m ()
8. How should a steel rule be cared for when not in use?
(a) Dip it in water ()
(b) **Wiped clean, oiled, stored flat** ()
(c) Proper storage not required ()
(d) Stored outside ()
9. What are inside calliper primarily used to measure?
(a) Length of work piece ()
(b) **Internal diameter of hollow cylinder** ()
(c) Temperature ()
(d) Moisture ()
10. What is the purpose of a scriber?
(a) **To mark permanent line** ()
(b) To measure angle ()
(c) To increase weight ()
(d) To increase pressure ()
11. What is the standard least count of micrometer?
(a) 1.0 inch ()
(b) 0.01 inch ()
(c) **0.01 mm** ()
(d) 0.01 m ()
12. Which of the following is not a type of micrometer?
(a) Inside micrometer ()
(b) Depth micrometer ()
(c) **Liquid micrometer** ()
(d) Tube micrometer ()
13. What is the shape of micrometer frame?
(a) **'C' shape** ()
(b) 'O' shape ()
(c) Triangle ()
(d) Rectangle ()
14. What is the primary purpose of depth micrometer?
(a) To measure the outer diameter of a cylinder ()
(b) To measure of thickness ()
(c) **To measure the depth of a hole** ()
(d) To measure temperature ()

15. In a depth micrometer, what component ensures uniform measure pressure to maintain accuracy?
- (a) Locking clamp ()
 - (b) Ratchet stop** ()
 - (c) Spacing collar ()
 - (d) Thimble cap ()
16. What is the purpose of adjusting nut in a micrometer screw gauge?
- (a) To prevent rust ()
 - (b) To prevent slip ()
 - (c) Compensate for wear between screw and nut** ()
 - (d) For storage ()
17. What is the primary purpose of applying a light film of oil to a vernier caliper?
- (a) To increase least count ()
 - (b) To decrease temperature ()
 - (c) To prevent rust and ensures smooth sliding movement**()
 - (d) To decrease humidity ()
18. What is the primary use of dial bore gauge?
- (a) Measuring humidity ()
 - (b) Measuring thickness of plate ()
 - (c) Measuring temperature ()
 - (d) Measuring the inside diameter of a hole** ()
19. Use of thread pitch gauge.
- (a) To determine the pitch** ()
 - (b) To measure of tensile strength ()
 - (c) To measure depth of hole ()
 - (d) To measure current ()
20. What is the standard unit of measurement for tyre pressure?
- (a) Meter ()
 - (b) PSI** ()
 - (c) Kilogram ()
 - (d) Inches ()
21. When two plates are brought face to face and overlapped on each other, the resulting joint is called:
- (a) Lap joint** ()
 - (b) Pin joint ()
 - (c) Riveted joint ()
 - (d) Resistance joint ()
22. Which joint is predominantly used to fabricate built-up structure where two plates are joint at right angle?
- (a) Lap joint ()
 - (b) Adhesive joint ()
 - (c) Tee joint** ()
 - (d) Butt joint ()

23. Which of the following is considered a temporary joint?
- (a) Welded joint ()
 - (b) Riveted joint ()
 - (c) Brazed joint ()
 - (d) **Bolted joint** ()
24. Which metal joining process provides a leak proof joint?
- (a) **Welded joint** ()
 - (b) Bolted joint ()
 - (c) Threaded joint ()
 - (d) Knuckle joint ()
25. When a nut is tightened on a bolt, what stress is primarily induced?
- (a) Shear stress ()
 - (b) Circle stress ()
 - (c) Butt joint ()
 - (d) **Tensile stress** ()
26. What are the primary constituents of a standard soft solder alloy?
- (a) **Tin and lead** ()
 - (b) Aluminium ()
 - (c) Mild steel ()
 - (d) Hardened steel ()
27. What is the defining characteristics of brazing process?
- (a) Metals rub each other ()
 - (b) Quenching ()
 - (c) **The filler metal melts above 450°C but below the parent metal melting point** ()
 - (d) Rubbing of parents metals ()
28. What is the main purpose of gasket?
- (a) **To prevent leakages between two mating surfaces** ()
 - (b) To reduce temperature ()
 - (c) To increase resistance ()
 - (d) To allow passage of air ()
29. What type of seal does a gasket provide?
- (a) Dynamic seal ()
 - (b) Audio seal ()
 - (c) Moving seal ()
 - (d) **Static seal** ()
30. What is the main function of hacksaw in fitting works?
- (a) **To cut metal rods, pipes and sheets** ()
 - (b) To tightened loose screw ()
 - (c) To measure temperature ()
 - (d) To bend metal safely ()

31. What is the rate of flow of electric over time called?
(a) **Electric current** ()
(b) Resistance ()
(c) Humidity ()
(d) Speed ()
32. What is the SI unit of electric power?
(a) Degree ()
(b) Kg/cm ()
(c) Voltage ()
(d) **Watt** ()
33. Which law defines the direct relationship between voltage, current and resistance?
(a) Uniform Law ()
(b) **Ohm's Law** ()
(c) Direct Law ()
(d) Newton's Law ()
34. What is the fundamental SI unit of voltage?
(a) **Volts** ()
(b) Newton ()
(c) Degree ()
(d) Current ()
35. What is the SI unit of electrical resistance?
(a) Volts ()
(b) Nm ()
(c) Kg ()
(d) **Ohm** ()
36. What does a continuity test on a multi-meter primarily checks?
(a) Its temperature ()
(b) Weights ()
(c) **Whether the circuit is open or closed** ()
(d) Lengths of cable ()
37. Why is copper the most widely used material for electrical wires?
(a) Due to its resistance ()
(b) Perfect insulator ()
(c) **It is an excellent electrical conductor** ()
(d) Resistance against humidity ()
38. What is the primary function of an electrical fuse?
(a) To remove humidity ()
(b) To reduce heat ()
(c) To store electrical energy ()
(d) **To prevent excessive current flow** ()

39. What does the acronym MCB stand for in electrical protection?
- (a) **Miniature Circuit Breaker** ()
 - (b) Maximum Circuit Breaker ()
 - (c) Minimum Circuit Box ()
 - (d) Main Circuit Band ()
40. What is the electrolyte used in a lead-acid battery?
- (a) Boiling Water ()
 - (b) Salty water ()
 - (c) **Diluted sulfuric acid** ()
 - (d) Lemon juice ()
41. What types of energy does a capacitor store?
- (a) Heat energy ()
 - (b) Magnetic energy ()
 - (c) Pressure ()
 - (d) **Potential energy** ()
42. What is the primary function of a battery or an electrical cell?
- (a) **Convert chemical energy into electrical energy** ()
 - (b) Store magnetic energy ()
 - (c) Acts as capacitor ()
 - (d) Stores heat energy ()
43. Why does maintenance free battery not require water to be added?
- (a) They do not contain water ()
 - (b) Water has to be add occasionally ()
 - (c) They are completely dry ()
 - (d) **They are sealed and use gas recombination cycles** ()
44. A solar (PV) cell converts light energy into which type of energy?
- (a) Kinetic energy ()
 - (b) **Electric energy** ()
 - (c) Hydraulic energy ()
 - (d) Mechanical energy ()
45. What is the fundamental physical process of photo-voltaic cell?
- (a) Magnetic effect ()
 - (b) See beck effect ()
 - (c) **Photo-voltaic effect** ()
 - (d) Direct effect ()
46. Which of the following materials is commonly used as a natural piezoelectric crystal?
- (a) **Quartz** ()
 - (b) Stone ()
 - (c) Wood ()
 - (d) Metal ()

47. Which of the following devices works on the principle of electromagnetic induction?
- (a) IC engines ()
 - (b) Transformer** ()
 - (c) Heater ()
 - (d) Resistor ()
48. A transformer works on:
- (a) AC only** ()
 - (b) DC only ()
 - (c) AC & DC ()
 - (d) Neither AC nor DC ()
49. Which device do protective relays primarily operate to isolate a fault?
- (a) Transformer ()
 - (b) Isolators ()
 - (c) Circuit Breaker** ()
 - (d) Switch ()
50. How is electrical power transferred between primary and secondary winding of a transformer?
- (a) By electric cable ()
 - (b) By connecting rod ()
 - (c) By heating effects ()
 - (d) By electromagnetic induction** ()
51. Arc welding uses an electric arc to generate intense heat, converting electrical energy into:
- (a) Heat energy** ()
 - (b) Moisture ()
 - (c) Potential energy ()
 - (d) Kinetic energy ()
52. For arc welding, power source can be:
- (a) AC & DC** ()
 - (b) Only AC ()
 - (c) Only DC ()
 - (d) Solar energy ()
53. What electrical conditions are required for arc welding?
- (a) Only low current ()
 - (b) Only high voltage ()
 - (c) High current and low voltage** ()
 - (d) High resistance ()
54. What is the ratio of oxygen to acetylene required to produce a neutral flame?
- (a) 20:1 ()
 - (b) 10:1 ()
 - (c) 1:20 ()
 - (d) 1:1** ()

55. Which type of joint is primarily used in spot welding?
- (a) **Lap joint** ()
 - (b) 'T' joint ()
 - (c) 'Y' joint ()
 - (d) Corner joint ()
56. How is the metal being joined in spot welding held together?
- (a) By wire ()
 - (b) By riveting ()
 - (c) **By electrode contact pressure** ()
 - (d) By chemical adhesive ()
57. Heat treatment process where a material is heated to a specific temperature, held there and cooled slowly is called:
- (a) Condenser ()
 - (b) **Annealing** ()
 - (c) Induction ()
 - (d) Humidifier ()
58. What is the primary objective of hardening process?
- (a) To soften it ()
 - (b) To increase humidity ()
 - (c) **To increase hardness and strength** ()
 - (d) To increase conductance ()
59. Which fuel gas is most commonly used in flame hardening process?
- (a) Helium ()
 - (b) Carbon dioxide ()
 - (c) Hydrogen ()
 - (d) **Oxy-acetylene** ()
60. In tungsten inert gas (TIG) welding, the electrode is made of:
- (a) Carbon ()
 - (b) Oxygen ()
 - (c) **Tungsten** ()
 - (d) Mild steel ()
61. The principle that the pressure intensity in a fluid at a given depth is the same in all directions is known as:
- (a) Induction ()
 - (b) **Pascal's law** ()
 - (c) Newton's law ()
 - (d) Induction ()
62. Which of the following fluid is utilized in hydraulic system?
- (a) Atmosphere ()
 - (b) Water ()
 - (c) Liquefied gas ()
 - (d) **Relatively incompressible liquids** ()

63. What is the fundamental working medium of pneumatic system?
(a) Pressurised water ()
(b) Hydraulic oil ()
(c) **Compressed air or gas** ()
(d) Stone clipped ()
64. What is the primary function of a pressure control valve?
(a) **To regulate or limit fluid pressure** ()
(b) To stop fluid flow ()
(c) To decrease temperature ()
(d) To increase temperature ()
65. Viscosity is the measure of hydraulic fluid's:
(a) Colour ()
(b) Temperature ()
(c) Quantity ()
(d) **Thickness** ()
66. Kinetic viscosity is defined as:
(a) **Dynamic viscosity ÷ density** ()
(b) Volume × density ()
(c) Maximum temperature ()
(d) Efficiency ()
67. What is the primary purpose of non-return valve?
(a) It decrease fluid flow ()
(b) It provide constant fluid flow ()
(c) **It allows fluid in one direction and prevents reverse flow** ()
(d) It regulates temperature ()
68. Which of the following is another name for a non-return valve?
(a) **Check valve** ()
(b) Humidifier ()
(c) Water hammer ()
(d) Reservoir ()
69. How many fluid ports does a standard double acting cylinder possess?
(a) Ten ports ()
(b) **Two ports** ()
(c) Five ports ()
(d) One ports ()
70. Which of the following is commonly used as a flow control valve in automobiles?
(a) Non-return valve ()
(b) Sluice valve ()
(c) Cable valve ()
(d) **Needle valve** ()

71. An internal combustion engine is a heat engine that converts chemical energy from fuel into:
- (a) Combustion ()
 - (b) **Mechanical energy** ()
 - (c) Efficiency ()
 - (d) Hydraulic energy ()
72. A cylindrical components that moves up and down inside the cylinder is called:
- (a) Crankshaft ()
 - (b) Combustion chamber ()
 - (c) Flywheel ()
 - (d) **Piston** ()
73. An IC engine where fuel ignites from intense heat of highly compressed air is called:
- (a) Steam engine ()
 - (b) Combustion engine ()
 - (c) **CI engine** ()
 - (d) SI engine ()
74. CI engine predominantly run on:
- (a) **Diesel fuel** ()
 - (b) Petrol fuel ()
 - (c) Gas fuel ()
 - (d) Air ()
75. How many revolutions of the crankshaft are required to complete one working cycle in 4 stroke engine?
- (a) 10 revolutions ()
 - (b) 4 revolutions ()
 - (c) 12 revolutions ()
 - (d) **2 revolutions** ()
76. What is the defining advantages of two stroke engine?
- (a) **Simplicity and higher power to weight ratio** ()
 - (b) Cleaner exhausts emission ()
 - (c) Fuel economy ()
 - (d) Increase temperature ()
77. To ignite compressed charge, SI engine used:
- (a) **Sparkplug** ()
 - (b) Heater ()
 - (c) Gas lighter ()
 - (d) Sun light ()
78. What exactly does a car's speedometer measure?
- (a) Fuel consumption ()
 - (b) **Instantaneous speed** ()
 - (c) Coolant level ()
 - (d) Exhaust level ()

79. What physical property does tachometer measure?
(a) Temperature ()
(b) Conductance ()
(c) **Rotational speed** ()
(d) Moisture ()
80. The internal diameter of engine cylinder is called:
(a) **Bore** ()
(b) Flywheel ()
(c) Crankshaft ()
(d) Braking ()
81. Which component is responsible for drawing fuel from the tank and sending it to the injection pump?
(a) Combustion chamber ()
(b) Fuel filter ()
(c) **Fuel feed pump** ()
(d) Governor ()
82. What is the primary function of the fuel injector in a diesel engine?
(a) Injecting fuel to the tank ()
(b) Engine lubrication ()
(c) Engine cooling ()
(d) **To deliver fuel into the combustion chamber** ()
83. Which of the following parts is not related to cylinder head?
(a) Fuel injectors ()
(b) Cooling passage ()
(c) Valves ()
(d) **Wheel** ()
84. Which of the following is not types of combustion chamber?
(a) Pre-combustion chamber ()
(b) Open combustion chamber ()
(c) Air cell chamber ()
(d) **Fuel tank** ()
85. Primary function of the camshaft in a diesel engine's valve mechanism is?
(a) **To convert rotary motion into reciprocating motion** ()
(b) To acts as a coolant ()
(c) To make it lighter ()
(d) To minimize fuel consumption ()
86. What is the primary function of engine valves in an IC engine?
(a) To pump fuel ()
(b) To increase temperature ()
(c) To decrease fuel wastage ()
(d) **To open and close the inlet and exhaust passage of cylinder** ()

87. What type of motion does camshaft convert the crankshaft's rotary motion into?
- (a) **Linear motion** ()
 - (b) Slow motion ()
 - (c) Planetary motion ()
 - (d) Fluid motion ()
88. Purpose of timing belt or timing chains in diesel engine is:
- (a) To drive the wheel ()
 - (b) To drive fuel pump ()
 - (c) To maintain correct tyre pressure ()
 - (d) **To synchronize the motion of crankshaft and camshaft** ()
89. Pulley mounted against the timing belt that applies constant exact pressure on engine is called?
- (a) Cams ()
 - (b) Gears ()
 - (c) **Tensioner** ()
 - (d) Timer ()
90. Core functions of piston ring in diesel engine is:
- (a) Acts as fuel pump ()
 - (b) **Sealing combustion chamber** ()
 - (c) To increase fuel consumption ()
 - (d) To maintain tyre pressure ()
91. A DC Generator converts mechanical energy into electrical energy based on:
- (a) Newton's law ()
 - (b) Quality of fuel ()
 - (c) Bernoulli's principle ()
 - (d) **Faraday's law of electromagnetic induction** ()
92. In Generator, the process by which current direction is reversed as the coil passes the brush contact is called:
- (a) **Commutation** ()
 - (b) Rotor ()
 - (c) Joint ()
 - (d) Expander ()
93. A rectangular coil consisting of many turns of conducting wire wound around a soft iron in AC Generator is called:
- (a) Stator ()
 - (b) Flux ()
 - (c) Rotation ()
 - (d) **Armature** ()
94. Two hollow metallic rings connected to the end of the armature coil, that rotate along with the coil is called:
- (a) Wiring ()
 - (b) Magnetic fields ()
 - (c) **Slip ring** ()
 - (d) Rotor ()

95. A vital electrical generator that converts mechanical energy from an IC Engine to electrical energy is called:
- (a) **Alternator** ()
 - (b) Wheel assembly ()
 - (c) Knocking ()
 - (d) Timer ()
96. What is the primary function of an alternator's voltage regulator?
- (a) To control fuel flow ()
 - (b) **To control and maintain constant output** ()
 - (c) It regulates temperature ()
 - (d) It regulates humidity ()
97. What is the primary function of ignition warning lamp in alternator?
- (a) To indicate fuel level ()
 - (b) To indicate extreme temperature ()
 - (c) **To provide initial excitation current to the alternator field winding** ()
 - (d) to decrease efficiency ()
98. What happened to the warning lamp if the alternator drive belt breaks?
- (a) The lamp goes off ()
 - (b) The lamp breaks ()
 - (c) The lamp did not function ()
 - (d) **The lamps glows brightly** ()
99. A high current electrical system that converts electrical energy from the battery into mechanical force to crank the engine is called:
- (a) Rotor ()
 - (b) **Starter system** ()
 - (c) Exciter ()
 - (d) Battery banks ()
100. In a DC Generator which components produces the magnetic field necessary for generation?
- (a) **Field winding** ()
 - (b) Mounting bolt ()
 - (c) Shaft ()
 - (d) Carbon deposits ()

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