



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

WRITTEN EXAMINATION : 2025
FOR THE POST OF

ASSISTANT MECHANIC
(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: _____
(To be filled in by Candidate)

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

ASSISTANT MECHANIC : PAPER-III (Technical Papers)

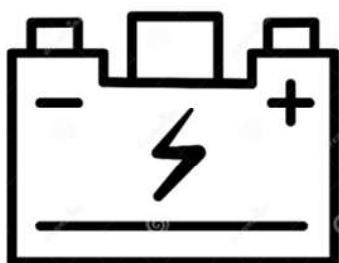
(Each question carry 2(two) marks, the total is 200 marks and all question carry equal mark)

1. Which is a mechanical hazard in the workshop?
(a) Sickness ☐ (b) Current leakage ☐
(c) Unguarded machinery ☐ (d) Wrong layout of machinery ☐
2. Which personal protective equipment is used for eye?
(a) Cap ☐ (b) Mask ☐
(c) Gloves ☐ (d) Goggles ☐
3. Which personal protective equipment is used for head?
(a) Helmet ☐ (b) Boot ☐
(c) Mask ☐ (d) Apron ☐
4. Which oil is used in lifts and cranes
(a) Gingelly oil ☐ (b) Hydraulic oil ☐
(c) Groundnut oil ☐ (d) Coconut oil ☐
5. Which causes the fire while refuelling the hot engine?
(a) Vapour ☐ (b) Paper ☐
(c) Cloth ☐ (d) Leather ☐
6. Which toxic material causes lung cancer?
(a) Fiber ☐ (b) Asbestos ☐
(c) Wood ☐ (d) Graphite ☐
7. Which causes electric fire?
(a) Rated fuses ☐ (b) Overloaded circuits ☐
(c) Under loaded circuit ☐ (d) Rigid wire connection ☐
8. Which is an highly flammable liquid?
(a) crude oil ☐ (b) water ☐
(c) diesel ☐ (d) LPG ☐
9. Which Class refers to gas burning fire?
(a) Class - A ☐ (b) Class - B ☐
(c) Class - C ☐ (d) Class - D ☐
10. Which object prevents Class 'B' fire?
(a) CO₂ ☐ (b) Argon ☐
(c) Oxygen ☐ (d) Nitrogen ☐
11. Which fire extinguisher is suitable for class 'A' fire?
(a) Halon ☐ (b) Dry powder ☐
(c) Carbon-di-oxide ☐ (d) Water ☐
12. Which fire extinguisher is suitable for class 'C' fire?
(a) Foam filled extinguisher ☐ (b) Water filled extinguisher ☐
(c) Dry powder fire extinguisher ☐ (d) Carbon-di-oxide fire extinguisher ☐
13. Which safety includes usage of gloves and helmets in a workshop?
(a) General safety ☐ (b) Personal safety ☐
(c) Machine safety ☐ (d) Electric safety ☐

14. Which part is affected by high noise level at workplace?
 (a) Ear ☐ (b) Eye ☐
 (c) Nose ☐ (d) Head ☐
15. Which personal protective equipment protects us from dust particles?
 (a) Face shield ☐ (b) Apron ☐
 (c) Gloves ☐ (d) Mask ☐
16. Which automobile component accumulates dust?
 (a) Axle ☐ (b) Piston ☐
 (c) Brake shoe ☐ (d) Gear box ☐
17. Which process isolates the fire from oxygen supply?
 (a) Cooling ☐ (b) Starting ☐
 (c) Smothering ☐ (d) Misfiring ☐
18. Which Class fire includes burning of wood, cloth and paper?
 (a) Class - A ☐ (b) Class - B ☐
 (c) Class - C ☐ (d) Class - D ☐
19. Which fire extinguisher is not suitable for electric fire?
 (a) CO₂ ☐ (b) Foam ☐
 (c) CTC ☐ (d) Dry powder ☐
20. What is first aid?
 (a) Immediate care and support given to an injured person ☐
 (b) Scanning of victim ☐
 (c) Assessing a victim's vital signs ☐
 (d) Undertake operation ☐
21. What is the next step after completing the first aid?
 (a) Inform to family ☐ (b) Call your friend ☐
 (c) Call fire service ☐ (d) Call emergency service ☐
22. Which class of fire comes under flammable liquids?
 (a) Class - A ☐ (b) Class - B ☐
 (c) Class - C ☐ (d) Class - D ☐
23. Which safety states "Don't spill the fuel on workplace"?
 (a) Personal safety ☐ (b) Machine safety ☐
 (c) General safety ☐ (d) Chemical safety ☐
24. Which gauge is used to check the inflation in tyres?
 (a) Wire gauge ☐ (b) Feeler gauge ☐
 (c) Vacuum gauge ☐ (d) Pressure gauge ☐
25. Which is an indirect measuring instrument?
 (a) Steel rule ☐ (b) Inside caliper ☐
 (c) Inside micrometer ☐ (d) Outside micrometer ☐
26. What is the specification of screw driver?
 (a) Length of blade and width of tip ☐ (b) Width and diameter of the edge ☐
 (c) Thickness and length ☐ (d) Shape and length ☐
27. Which gauge is used to check the spark plug gap?
 (a) Telescopic gauge ☐ (b) Radial gauge ☐
 (c) Screw pitch gauge ☐ (d) Feeler gauge ☐
28. Which instrument is used to check the piston ring end gap?
 (a) Radial gauge ☐ (b) Feeler gauge ☐
 (c) Pitch gauge ☐ (d) Telescopic gauge ☐

29. What is the use of ratchet stop in outside micro meter?
 (a) Prevents load ☐ (b) Prevents speed ☐
 (c) Prevents excessive pressure ☐ (d) Prevents sliding ☐
30. Which type of socket spanner can be turned to an angle?
 (a) Socket spanner ☐ (b) Deep socket spanner ☐
 (c) Spark plug socket spanner ☐ (d) Swivel socket spanner ☐
31. Which tool is used to tighten the nuts and the bolts at the recommended tightness?
 (a) Torque wrench ☐ (b) Stud wrench ☐
 (c) Pipe wrench ☐ (d) Adjustable wrench ☐
32. How the hammers are specified?
 (a) Size and shape ☐ (b) Weight and shape ☐
 (c) Metal and shape ☐ (d) Metal and weight ☐
33. Which part of the engine is measured by bore dial gauge?
 (a) Crank pin ☐ (b) Gudgeon pin ☐
 (c) Cylinder ☐ (d) Piston ☐
34. Which instrument is used to check the run-out of crankshaft journals?
 (a) Telescopic gauge ☐ (b) Dial test indicator ☐
 (c) Bore dial gauge ☐ (d) Vernier gauge ☐
35. Which precision instrument is used for taking external, internal and the depth measurement?
 (a) Depth micrometre ☐ (b) Inside micrometre ☐
 (c) Outside micrometre ☐ (d) Vernier calliper ☐
36. Which is used to hold a die?
 (a) Wrench ☐ (b) Spanner ☐
 (c) Stock ☐ (d) Chuck ☐
37. Which is a hardest abrasive material?
 (a) Diamond ☐ (b) Boron carbide ☐
 (c) Silicon carbide ☐ (d) Aluminium oxide ☐
38. What is the boiling point of water
 (a) 0°C ☐ (b) 32°C ☐
 (c) 100°C ☐ (d) 212°C ☐
39. Which is the unit of current ?
 (a) Volt ☐ (b) Ohm ☐
 (c) Watt ☐ (d) Ampere ☐
40. Which is very good conductor?
 (a) Cast iron ☐ (b) Copper ☐
 (c) Wrought iron ☐ (d) Steel ☐
41. What is the battery voltage used for heavy vehicles?
 (a) 6 volts ☐ (b) 36 volts ☐
 (c) 24 volts ☐ (d) 28 volts ☐
42. What is the working principle of clutch ?
 (a) Friction ☐ (b) Sliding ☐
 (c) Centripetal ☐ (d) Screw and Nut ☐
43. Which instruments are used while inspecting pressure plate warpage?
 (a) Steel rule and angle gauge ☐ (b) Straight edge and slip gauge ☐
 (c) Straight edge and feeler gauge ☐ (d) Parallel block and radius gauge ☐

44. Which instrument is used to check the face out of the fly wheel?
 (a) Bore dial gauge ☐ (b) Outside micrometer ☐
 (c) Inside micrometer ☐ (d) Dial test indicator ☐
45. Which type of seal allows a controlled amount of fluid leakage to lubricate moving parts?
 (a) Static seal ☐ (b) Non - positive seal ☐
 (c) Positive seal ☐ (d) Dynamic seal ☐
46. What is the name of seal used between two parts that do not move in relation to each other?
 (a) Static seal ☐ (b) Dynamic seal ☐
 (c) Square cut seal ☐ (d) Teflon seal ☐
47. Which force is directly proportional to the normal reaction between contacting surfaces?
 (a) Pulling force ☐ (b) Pushing force ☐
 (c) Frictional force ☐ (d) Allied force ☐
48. Which one of the following acts in between the wheels and roads, if vehicles are able to run on roads?
 (a) Friction ☐ (b) Corrosion ☐
 (c) Erosion ☐ (d) Motion ☐
49. Two general type of tyres are.
 (a) Air and pneumatic ☐ (b) Solid and tubeless ☐
 (c) Split rim and drop centre ☐ (d) Tube type and tubeless ☐
50. How many cells are used in a 12-volt car battery?
 (a) 2 ☐ (b) 6 ☐
 (c) 4 ☐ (d) 8 ☐
51. The power actually developed inside the engine cylinder is called as
 (a) Indicated power ☐ (b) Frictional power ☐
 (c) Brake power ☐ (d) None of these ☐
52. Choose the right option for the given symbol.

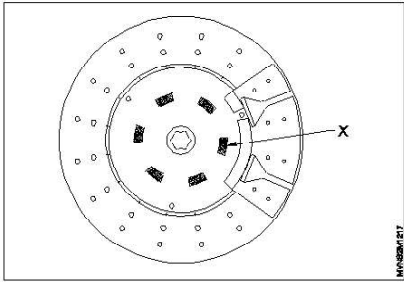


- (a) Oil pressure warning ☐ (b) Rear windows defrost ☐
 (c) Battery warning ☐ (d) All of these ☐
53. Choose the right option for the given symbol



- (a) Oil pressure warning ☐ (b) Emergency indicator ☐
 (c) Battery warning ☐ (d) Low fuel ☐

54. What is the name of the part marked as 'X' shown in the figure?



- (a) Clutch lining

☐
- (b) Damper spring

☐
- (c) Torque plate

☐
- (d) Rivets

☐
55. What is the advantage of dog clutch ?
- (a) No possibility of slip

☐
- (b) More frictional area

☐
- (c) Less pedal force of slip

☐
- (d) Easy maintenance and repair

☐
56. Which type of clutch provides more frictional area and simple in construction?
- (a) Diaphragm spring clutch

☐
- (b) Cone clutch

☐
- (c) Dog clutch

☐
- (d) Multi plate clutch

☐
57. What is the advantage of using single plate hydraulic clutch?
- (a) Maximize the force to operate the clutch

☐
- (b) Hard transmission

☐
- (c) Minimize the force to operate the clutch

☐
- (d) Easy repair and maintenance

☐
58. Which part of dual mass fly wheel isolate the fly wheel mass system of the engine?
- (a) Vibration damper

☐
- (b) Gear box

☐
- (c) Crank shaft

☐
- (d) Cam shaft

☐
59. What is the main feature of hydraulic actuated clutches?
- (a) Pedal effort transmitted through linkage

☐
- (b) Pedal effort transmitted through spring

☐
- (c) Pedal effort transmitted through coupling

☐
- (d) Pedal effort transmitted through fluid

☐
60. What is the advantage of mechanical actuated type clutches?
- (a) Less maintenance and repair

☐
- (b) Less pedal effort

☐
- (c) Smooth functioning

☐
- (d) Easy to operate

☐
61. Which factor does not affect the torque transmission by clutch?
- (a) Size of clutch plate

☐
- (b) Co-efficient friction

☐
- (c) Radial load on the clutch

☐
- (d) Number of clutch plates used

☐
62. What is the function of clutch?
- (a) Increase and decrease the RPM of engine

☐
- (b) Connect and disconnect power flow engine to gear box

☐
- (c) Reduce the noise during engine running

☐
- (d) Prevent malfunctioning of fly wheel

☐
63. Which system making the drive cabin comfortable for driving?
- (a) Starting system

☐
- (b) Steering system

☐
- (c) Charging system

☐
- (d) HVAC system

☐
64. Which system provides DC power source for the various units of the vehicles?
- (a) Storage system

☐
- (b) Charging system

☐
- (c) Lighting system

☐
- (d) Steering system

☐

65. Which type of drive line used in sand and slushy ground?
 (a) Front wheel drive line ☐ (b) Rear wheel drive line ☐
 (c) All wheel drive line ☐ (d) Center wheel drive line ☐
66. Which type of gear box can be operated even by unskilled driver?
 (a) Sliding mesh gear box ☐ (b) Constant mesh gear box ☐
 (c) Compound wheel mesh gear box ☐ (d) Synchromesh gear box ☐
67. Which type of synchromesh gear box will produce torque more than three times of other types?
 (a) Baulk type ☐ (b) Multi and Double cone ☐
 (c) Baulk ring type ☐ (d) Porsche type ☐
68. Which type of synchromesh gear box used for heavy commercial vehicles?
 (a) Baulk type ☐ (b) Multi and Double cone ☐
 (c) Baulk ring type ☐ (d) Porsche type ☐
69. Which gear will produce clicking noise during teeth contact?
 (a) Spur gear ☐ (b) Bevel gear ☐
 (c) Helical gear ☐ (d) Worm gear ☐
70. What is the location of propeller shaft?
 (a) Between clutch shaft and fly wheel ☐ (b) Between crankshaft and fly wheel ☐
 (c) Between cam shaft and clutch shaft ☐ (d) Between gear box and final drive ☐
71. Which part provides flexible connection and permits smooth transfer of torque from gear box to the rear axle?
 (a) Fly wheel ☐ (b) Half shaft ☐
 (c) Universal joint ☐ (d) Clutch shaft ☐
72. A speedometer is used to measure:
 (a) Engine temperature ☐ (b) Battery voltage ☐
 (c) Fuel level ☐ (d) Vehicle speed ☐
73. What is the purpose of coolant in a vehicle?
 (a) Clean the tires ☐ (b) Prevent engine overheating ☐
 (c) Lubricate gears ☐ (d) Charge the battery ☐
74. A battery supplies what kind of electricity?
 (a) AC (Alternating Current) ☐ (b) DC (Direct Current) ☐
 (c) Static electricity ☐ (d) Magnetic energy ☐
75. One metre equal to
 (a) 1 centimetre ☐ (b) 10 centimetre ☐
 (c) 100 centimetre ☐ (d) 1000 centimetre ☐
76. Which type of clutch does not require clutch pedal?
 (a) Centrifugal ☐ (b) Cone ☐
 (c) Diaphragm ☐ (d) Single plate ☐
77. Which is the final unit in transmission system?
 (a) Differential ☐ (b) Rear axle ☐
 (c) Gear box ☐ (d) Final drive ☐
78. What is the name of smallest gears inside the differential casing?
 (a) Sun gear ☐ (b) Side gear ☐
 (c) Star gear ☐ (d) Ring gear ☐

79. A switch is used to:
- | | | | |
|---------------------|--------------------------|-----------------------------|--------------------------|
| (a) Store current | ☐ | (b) Open or close a circuit | ☐ |
| (c) Measure voltage | ☐ | (d) Heat wires | ☐ |
80. What does LED stand for?
- | | | | |
|-----------------------------|--------------------------|---------------------------|--------------------------|
| (a) Light Emitting Diode | ☐ | (b) Low Energy Device | ☐ |
| (c) Light Electrical Device | ☐ | (d) Long Electric Display | ☐ |
81. Electricity flows through a:
- | | | | |
|---------------|--------------------------|------------|--------------------------|
| (a) Plastic | ☐ | (b) Wood | ☐ |
| (c) Conductor | ☐ | (d) Rubber | ☐ |
82. What is function of automatic transmission?
- | | | | |
|-----------------------------------|--------------------------|-----------------------------------|--------------------------|
| (a) Shift the gears manually | ☐ | (b) Shift the gears electrically | ☐ |
| (c) Shift the gears pneumatically | ☐ | (d) Shift the gears automatically | ☐ |
83. Which type of system is to isolate the vehicle body from road shock and vibration?
- | | | | |
|----------------------|--------------------------|-----------------------|--------------------------|
| (a) Brake system | ☐ | (b) Suspension system | ☐ |
| (c) Hydraulic system | ☐ | (d) Steering system | ☐ |
84. Which part of heavy vehicle deals with static and dynamic loads without deflection or distortion?
- | | | | |
|--------------------|--------------------------|------------------------|--------------------------|
| (a) Engine | ☐ | (b) Power trains | ☐ |
| (c) Control system | ☐ | (d) Chassis and frames | ☐ |
85. Which way the steering system increase the tyre life?
- | | |
|--|--------------------------|
| (a) Maintaining proper angle between tyres | ☐ |
| (b) Providing adequate lubrication | ☐ |
| (c) Applying grease on the steering controls | ☐ |
| (d) Providing proper brake adjustment | ☐ |
86. What is the advantage of using power steering system?
- | | |
|--|--------------------------|
| (a) To turn and control vehicle with less effort | ☐ |
| (b) To increase the engine power | ☐ |
| (c) To reduce the fuel consumption | ☐ |
| (d) To enhance the fuel efficiency | ☐ |
87. What is the function of steering system?
- | | |
|--------------------------------|--------------------------|
| (a) Control the braking system | ☐ |
| (b) Increase the engine RPM | ☐ |
| (c) Guide the vehicle | ☐ |
| (d) Control the fuel system | ☐ |
88. Which of the following is commonly used as a lubricant in vehicle engines?
- | | | | |
|------------|--------------------------|--------------------------------|--------------------------|
| (a) Water | ☐ | (b) Three-point testing method | ☐ |
| (c) Petrol | ☐ | (d) Diesel | ☐ |
89. Which part of the vehicle is mainly lubricated by engine oil?
- | | | | |
|------------------|--------------------------|-------------------------|--------------------------|
| (a) Brake system | ☐ | (b) Radiator | ☐ |
| (c) Battery | ☐ | (d) Engine moving parts | ☐ |
90. What is the function of the oil filter in a vehicle?
- | | | | |
|--|--------------------------|---------------------------------|--------------------------|
| (a) To filter out impurities from the engine oil | ☐ | (b) To add fragrance to the oil | ☐ |
| (c) To increase engine speed | ☐ | (d) To lubricate the tires | ☐ |

91. What type of lubricant is used for the wheel bearings?
 (a) Engine oil ☐ (b) Coolant ☐
 (c) Grease ☐ (d) Petrol ☐
92. Which of these is a sign that engine oil needs changing?
 (a) Oil is clear and golden ☐ (b) Oil appears dark and dirty ☐
 (c) Oil level is full ☐ (d) Engine runs quietly ☐
93. Diesel engines are commonly found in:
 (a) Bicycles ☐ (b) Fans ☐
 (c) Mobile phones ☐ (d) Trucks and buses ☐
94. Which fuel is more commonly used in motorcycles?
 (a) Diesel ☐ (b) Gas ☐
 (c) Water ☐ (d) Petrol ☐
95. What is the purpose of the radiator in a vehicle?
 (a) To burn fuel ☐ (b) To cool the engine ☐
 (c) To lubricate parts ☐ (d) To store oil ☐
96. The battery in a vehicle supplies:
 (a) Air ☐ (b) Water ☐
 (c) Electrical power ☐ (d) Fuel ☐
97. Which part filters the air before it enters the engine?
 (a) Air filter ☐ (b) Oil filter ☐
 (c) Radiator ☐ (d) Gearbox ☐
98. What part of the vehicle connects the wheels and helps absorb shocks?
 (a) Radiator ☐ (b) Suspension system ☐
 (c) Battery ☐ (d) Air filter ☐
99. Which oil is used in the gearbox?
 (a) Break oil ☐ (b) Engine oil ☐
 (c) Gear oil ☐ (d) Coolant ☐
100. What is used to lift a car to change a tire?
 (a) Grinder ☐ (b) Pump ☐
 (c) Hammer ☐ (d) Jack ☐

---ooOoo---