

Skill Development and Entrepreneurship Department
Directorate of Vocational Education and Training
Directorate of Skill Development, Employment and Entrepreneurship
Question Paper Group Name: MECHANICAL-13
Question Paper Post Names: Craft Instructor – Pump Operator cum Mechanic, Mechanic Diesel

Duration: 60 Minutes

Total Questions: 40

INSTRUCTIONS

1. This Question Paper Booklet contents 40 mandatory questions. Candidate should check the Question Paper Booklet and ensure that it contents all pages and questions before starting to answer. If candidate finds any problem pertaining to printing/ binding/ incomplete pages etc, candidate should immediately get the Question Paper replaced from the Invigilator.
2. Candidate has to write his/ her seat number in this block.

| | | | | | | | | | |
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| | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|
3. The Question Booklet Number as printed above should be mentioned at the appropriate place on the OMR Answer Sheet.
4. All the Questions are provided with 4 options as 1, 2, 3 and 4. Candidate should select the most correct Option and mention the Option Number on the OMR Answer Sheet in front of the respective Question Number by **fully shading the Option Number with BLACK INK BALL POINT PEN Only.**
5. All Questions carry equal marks i.e. 1 Question has a weightage of 1 marks. Candidate should mind the available time for the examination and solve the questions accordingly.
6. The option shaded once on the OMR Answer Sheet should not be roughed or in any other way changed. Thus candidate should take utmost care while marking their options on OMR Answer Sheet. Such changes if any or any attempt to rough/ change options shall not be checked by the authorities.
7. Marks shall be awarded to the correct answers only during the evaluation of the OMR Answer Sheet. No marks shall be deducted for registering wrong answers (shading wrong option) or not attempting questions. Thus there is **NO NEGATIVE MARKING SYSTEM.**
8. All the rough work has to be done on the sheet provided for Rough Work in the Question Booklet only. Writing anything on the Question Paper Booklet, OMR Answer Sheet or any other Paper Sheet shall be treated as an unfair means and entitle for action under "Prohibition of Unfair Practices during examination Ordinance – 1982".
9. Method of Shading the Correct Option on the OMR Answer Sheet:

Q.No. 25. How many Centimeters make 1 Meter?

- | | |
|----------|-----------|
| (1) 10 | (2) 100 |
| (3) 1000 | (4) 10000 |

The Correct Option for this Question is (1) and hence the (2) option on the OMR Answer Sheet in front of Question Number 25 has to be shaded as following



Correct Method of Shading



Wrong Method of Shading

USE ONLY BLACK INK BALL POINT PEN FOR SHADING**IMPORTANT**

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THIS QUESTION PAPER BOOKLET AND PART – 1 OF OMR ANSWER SHEET HAVE TO BE SUBMITTED TO THE INVIGILATOR AFTER THE EXAMINATION.

1. Size is 20 ± 0.5 mm. Tolerance is

- | | |
|------------|------------|
| 1. 20.5 mm | 2. 20.0 mm |
| 3. 19.5 mm | 4. 1.0 mm |

2. Wing compass is used for

- | | |
|--------------------------------|--------------------------------|
| 1. Measure external dimensions | 2. Measure internal dimensions |
| 3. Mark arcs & circles | 4. Measure angles |

3. Air tank of air compressor in workshops are to be regularly drained as

- | | |
|--|-------------------------------------|
| 1. Oil is accumulated in air tank | 2. Water is accumulated in air tank |
| 3. It is not necessary to drain air tank | 4. Dust is accumulated in air tank |

4. For mechanical jack, most preferred thread type is

- | | |
|------------------|------------------|
| 1. Pipe thread | 2. ACME thread |
| 3. Square thread | 4. Metric thread |

5. Hand taps are used for

- | | |
|-----------------------|-----------------------|
| 1. Internal drilling | 2. Internal threading |
| 3. External threading | 4. None of the above |

6. Lip angle of drill is generally

- | | |
|----------------|----------------|
| 1. 120° | 2. 118° |
| 3. 90° | 4. 180° |

7. Drill gauge is used for checking

- | | |
|------------------|---------------------------|
| 1. Chisel angle | 2. Lip angle & Lip length |
| 3. Web thickness | 4. Drill length |

8. Vernier calipers are used for measuring

- | | |
|------------------------|------------------------|
| 1. Internal dimensions | 2. External dimensions |
| 3. Depth dimensions | 4. All of the above |

9. To remove circlips one can use

- | | |
|------------------|------------|
| 1. Screw drivers | 2. Wrench |
| 3. Pliers | 4. Hammers |

10. In four stroke engines the stroke sequence is

- | | |
|---|---|
| 1. Suction, power, Compression, exhaust | 2. Suction, Compression, power, exhaust |
| 3. Suction, exhaust, power, compression | 4. Suction, power, exhaust, compression |

11. Following parts confirmation type of engine fuel used

- | | |
|------------------------|------------------------|
| 1. Spark plug - diesel | 2. Carburetor - diesel |
| 3. Sparkplug - petrol | 4. None of the above |

12. Air cooled engines have

- | | |
|---------------------------------|---------------------------------|
| 1. Internal jackets for coolant | 2. External jackets for coolant |
| 3. Fins | 4. All above are incorrect |

13. De compressor level is provided in engines

- | | |
|-------------------------------------|-----------------------|
| 1. to compress the air fuel mixture | 2. To stop the engine |
| 3. To start the hand cranked engine | 4. All are incorrect |

14. To correct leaking valve seat _____ process is adopted.

- | | |
|--------------|------------|
| 1. Grinding | 2. Lapping |
| 3. Deburring | 4. Reaming |

15. Feeler gauges are used for

- | | |
|----------------------------------|---------------------------------|
| 1. Measurement of internal gaps | 2. Measurement of run out |
| 3. Measurement of thread pitches | 4. Measurement of depth of hole |

16. Cylinder liners are provided in cylinder blocks for

- | | |
|--------------------------------|------------------------------------|
| 1. Cost of maintenance is less | 2. Worn liners are easy to replace |
| 3. Entire block can be reused | 4. All above are correct |

17. Oil pump in engine is mostly driven by

- | | |
|----------|----------------------|
| 1. Chain | 2. Belt |
| 3. Band | 4. None of the above |

18. Thermostat in engines

1. Blocks the supply of coolant to radiator below 90°C
2. Allows the supply of coolant to radiator at temp below 90°C
3. It is closed at 110°C
4. It is not a part of coolant circuit

19. Low temp coolant in engines enters in engine

1. From bottom side of block
2. From top side of block
3. From middle of block
4. None of the above

20. Distributor is a device fitted in petrol engines to

1. To distribute fuel
2. To distribute electrical power
3. To distribute air
4. To distribute oil

21. While grinding operation one must be careful for safety of eyes by wearing

1. Hand gloves
2. Apron
3. Goggle
4. None of the above

22. Split pins used in fastners for

1. Splitting fastner
2. Locking nut
3. Locking washer
4. None of the above

23. Circlips are used for

1. Leak proof sliding joints
2. Leak proof rotating joints
3. Lock sliding elements
4. None of the above

24. 'O' rings are used for

1. Leak proof liquid joints
2. Leak proof gaseous joints
3. 1 & 2 are correct
4. 1 & 2 are incorrect

25. To calculate drill size 'D' of drill diameter for 'T' diameter of bolt, d is depth of thread. The formula is

1. $D = T + 2d$
2. $D = T - 2d$
3. $T = D + 2d$
4. $T = D - 2d$

26. If $V = 10$ Volts, $I = 10$ amps then the resistance R in Ω of wire is

- 1. 100
- 2. 1
- 3. 0.1
- 4. 20

27. If $R_1 = 10 \Omega$, $R_2 = 100 \Omega$ are connected in parallel. The equivalent resistance is

- 1. 110
- 2. 9.09
- 3. 90.9
- 4. 0.1

28. Priming of pump is

- 1. Removing dust in foot valve
- 2. Removing air in suction pipe
- 3. Adding water in delivery pipe
- 4. None of the above

29. Balancing rotating parts is essential as

- 1. It is unavoidable
- 2. It reduces vibrations
- 3. It increases life
- 4. None of the above

30. for induction hardening process


- 1. Gas furnace is used
- 2. Electric power is used
- 3. Flame method is used
- 4. None of the above

31. Hydraulics principles are used in automobiles

- 1. For brakes
- 2. For power steering
- 3. For shock absorbers
- 4. All of the above

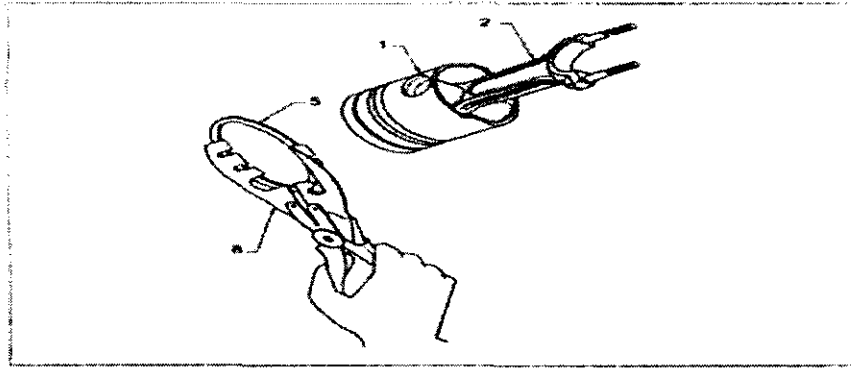
32. Submersible pumps are multistage pumps because

- 1. Head in each stage is low
- 2. Head in each stage is high
- 3. Discharge in each stage is high
- 4. None of the above

33. Symbol  is for

- 1. $\overline{A \cdot B}$
- 2. $\overline{A} \cdot \overline{B}$
- 3. $A \cdot B$
- 4. $A \cdot \overline{B}$

34. The tool '8' shown in diagram below is



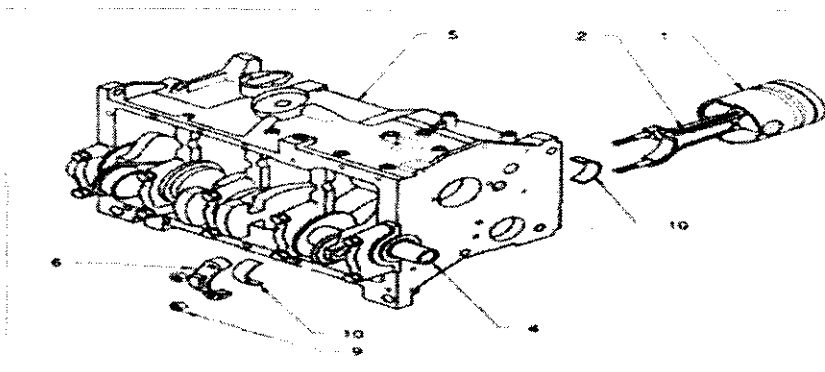
1. Monkey plier

2. Circlip plier

3. Ring expander

4. Wire cutter

35. Identify the part '10' in the diagram below



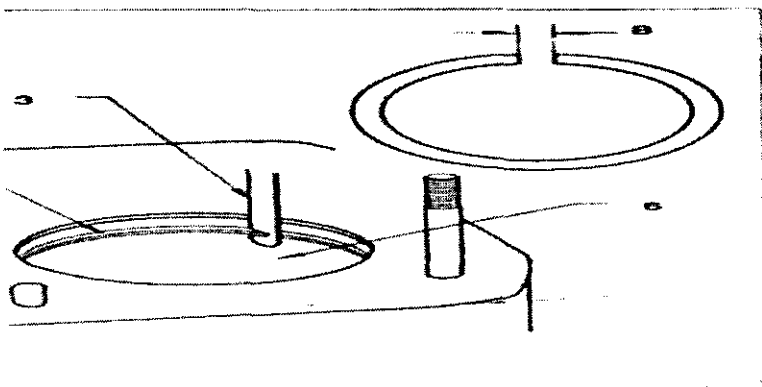
1. Con rod big end

2. Con rod

3. Bearing shell

4. Piston

36. The diagram mentioned below explains



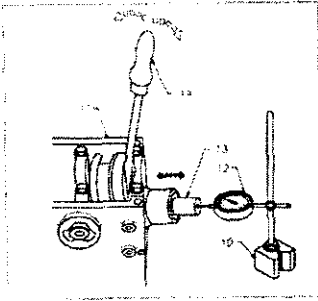
1. Piston ring and clearance

2. Size of bore

3. Size of piston ring

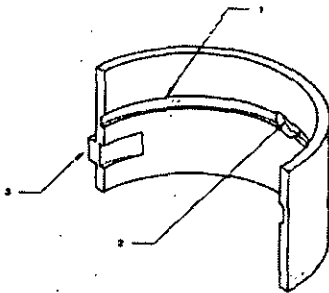
4. None of the above

37. In diagram mentioned below explain measurement of



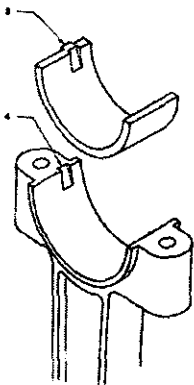
- | | |
|------------------------------|---|
| 1. Radial play in crankshaft | 2. Run out in crankshaft |
| 3. Bend in crankshaft | 4. End play or axial play in crankshaft |

38. The diagram & bearing shell is given below, in which '2' indicate



- | | |
|---------------------------|----------------------|
| 1. Hole of coolant | 2. Hole for oil |
| 3. Hole to lock the shell | 4. None of the above |

39. In the diagram below 3 & 4 indicate



- | | |
|----------------------|-----------------------------|
| 1. Notch for spanner | 2. Notch for coolant |
| 3. Notch for oil | 4. Notch for locking shells |

40. 1.5 m³ Volume is

- | | |
|----------------|---------------|
| 1. 1500 liters | 2. 150 liters |
| 3. 1500 CC | 4. 150 CC |