



AT 111 1st SEM MID-TERM EXAM

NAME: _____ Yr&Sec: _____ SCORE: _____

Multiple Choice

INSTRUCTION: Instructions: Select and encircle the answer that is most accurate and complete. Some options may be

I. Remembering (8 items)

1. What is the main function of an engine?
 - a) To store fuel
 - b) To convert heat energy into mechanical force
 - c) To cool the system
 - d) To hold moving parts
2. An engine that burns its fuel inside the cylinder is called:
 - a) External combustion engine
 - b) Diesel turbine
 - c) Internal combustion engine
 - d) Steam engine
3. Which is a classification of engine based on fuel?
 - a) Inline or V-type
 - b) Gasoline or Diesel
 - c) L-head or F-head
 - d) Water-cooled or Air-cooled
4. The piston's distance from TDC to BDC is called:
 - a) Cycle
 - b) Stroke
 - c) Compression
 - d) Ignition
5. What tool is used to install or remove nuts and bolts?
 - a) Screwdriver
 - b) Wrench
 - c) Pliers
 - d) Punch
6. Which screwdriver has two crossing blades?
 - a) Standard
 - b) Phillips
 - c) Torx
 - d) Reed and Prince
7. Which hammer is most common in automotive work?
 - a) Sledge
 - b) Ball peen
 - c) Brass
 - d) Rubber mallet
8. What is mushrooming in chisels?
 - a) Sharpened edge
 - b) Enlarged top after hammering
 - c) Rusting of surface
 - d) Shaping with file

II. Understanding (9 items)

9. Why is a two-stroke engine less fuel-efficient than a four-stroke engine?
 - a) More valves
 - b) Burns oil with fuel
 - c) Slower piston motion
 - d) Uses larger crankshaft
10. What happens during the compression stroke in a gasoline engine?
 - a) Both valves are open

- b) Both valves are closed
 - c) Only exhaust valve is open
 - d) Only intake valve is open
11. Why is water-cooling preferred in larger engines?
 - a) Simpler construction
 - b) Better heat dissipation
 - c) Less pollution
 - d) Lighter engine weight
12. Why should wrenches fit snugly on bolts?
 - a) Prevent slipping and rounding of bolt heads
 - b) Increase leverage
 - c) Reduce torque
 - d) Speed up rotation
13. Why is a toolbox important?
 - a) It decorates the shop
 - b) Organizes and protects tools
 - c) Replaces tools
 - d) Increases torque
14. What is the role of a spark plug?
 - a) Compress air-fuel mixture
 - b) Ignite air-fuel mixture
 - c) Remove exhaust gases
 - d) Cool the cylinder
15. Why is the ball peen hammer commonly used?
 - a) Multi-use for shaping and striking
 - b) Light blows only
 - c) Works only on rubber
 - d) More decorative
16. Why are files not pressed hard during filing?
 - a) To avoid overheating and breaking
 - b) To file faster
 - c) To sharpen chisels
 - d) To round edges
17. Which stroke involves opening of exhaust valve in diesel engines?
 - a) Intake
 - b) Compression
 - c) Power
 - d) Exhaust

III. Applying (9 items)

18. Which cooling method would you recommend for a motorcycle engine?
 - a) Water cooling
 - b) Air cooling
 - c) Oil cooling
 - d) Steam cooling
19. A mechanic selects a line wrench to loosen brake line fittings. Why?
 - a) To hammer on bolts
 - b) To fit around tubing without damage
 - c) To cut bolts
 - d) To hold wires

- tool should be chosen to grip and bend small wires?
- Locking pliers
 - Needle-nose pliers
 - Diagonal cutters
 - Channel locks
21. A car technician notices worn-out spark plugs. What will likely happen?
- Stronger ignition
 - Engine misfiring
 - More efficient combustion
 - Improved cooling
22. If a technician wants to remove rust and old gaskets, which tool is best?
- Screwdriver
 - File
 - Scraper or wire brush
 - Pliers
23. Which tool is suitable for cutting frozen bolts?
- Hacksaw
 - File
 - Snap ring pliers
 - Vise
24. A socket with a 3/8-inch drive size fits into:
- A wrench
 - A ratchet handle
 - A vise
 - A screwdriver
25. When removing a very large nut, which wrench type is best?
- Allen wrench
 - Channel lock pliers
 - Combination wrench
 - Box-end wrench
26. A mechanic holds a workpiece steady for drilling. Which tool is used?
- Clamp
 - Vise
 - Mallet
 - Snap ring pliers
- IV. Analyzing (12 items)**
27. Compare: Two-stroke vs. Four-stroke – which lasts longer?
- Two-stroke, because it's simpler
 - Four-stroke, because parts wear slower
 - Both are equal
 - Neither
28. Why does diesel ignite without a spark plug?
- It uses more valves
 - Compression raises air temperature enough for ignition
 - Diesel fuel is pre-heated
 - Exhaust gases ignite it
29. Which is the relationship between inline and V-type engines?
- Both are fuel classifications
 - Both are cylinder arrangements
 - Both are valve arrangements
 - Both are cooling methods
30. Which scenario best explains why air cooling is limited to small engines?
- a) Larger engines produce more heat than air alone. can dissipate
b) Water is heavier than air
c) Air cooling requires more valves
d) Air cooling wastes oil
31. What is the relationship between box-end and open-end wrenches?
- Both used for same purpose with different grip styles
 - Both are used only for large bolts
 - One is metric, the other inch
 - Box-end is weaker
32. Which explains why a ratchet is the most common socket handle?
- It allows turning without removing tool repeatedly
 - It is the strongest
 - It is decorative
 - It replaces torque wrench
33. A mushroomed chisel top is unsafe because:
- It may break into fragments when struck
 - It cuts unevenly
 - It is sharper
 - It grips better
34. Why are pliers classified into different types?
- Each type is designed for specific jobs
 - They are for decoration
 - They differ only in color
 - To confuse users
35. Which type of hammer is safest for delicate parts?
- Sledge hammer
 - Plastic or rawhide hammer
 - Ball peen
 - Channel lock
36. How does valve arrangement affect engine performance?
- It changes how air/fuel mixture flows and ignites
 - It determines piston weight
 - It alters crankshaft length
 - It cools the engine
37. Which scenario shows the need for extension on a socket handle?
- Bolt hidden behind obstruction
 - Large bolts need more force
 - Nut stuck in rust
 - Bolt is small
38. Why must toolboxes be organized?
- Saves time and improves efficiency
 - Decorates workshop
 - Reduces torque
 - Prevents engine wear
- V. Evaluating (6 items)**
39. Which engine type is BEST for small, lightweight vehicles?
- Four-stroke
 - Diesel
 - Two-stroke
 - External combustion
40. Which hand tool safety rule is MOST important?
- Using tools without handles
 - Wearing safety glasses during cutting
 - Hammering screwdrivers
 - Filing rapidly

* tool is most effective for removing tight screws?

- a) Impact driver
- b) Standard screwdriver
- c) Stubby screwdriver
- d) Torx screwdriver

42. Evaluate: Which wrench type is STRONGEST?

- a) 4-point
- b) 6-point
- c) 8-point
- d) 12-point

43. Which cooling method is MOST effective for truck engines?

- a) Air cooling
- b) Water cooling
- c) Oil cooling
- d) None

44. Which practice improves safety when using chisels?

- a) Grinding off mushroomed heads
- b) Striking sideways
- c) Using without safety goggles
- d) Hammering faster

VI. Creating (6 items)

45. If designing an eco-friendly small engine, which feature is best?

- a) Two-stroke using less fuel
- b) Four-stroke with higher efficiency
- c) Diesel with no spark plug
- d) External combustion only

46. Imagine you create a toolbox for beginners. Which feature should you include?

- a) Organized drawers by tool type
- b) Heavy, unmarked boxes
- c) No handles
- d) Random placement

47. If you design a safety campaign for mechanics, which slogan is best?

- a) "The right tool for the right job"
- b) "Hammer it harder"
- c) "Skip goggles for speed"
- d) "Force fits faster"

48. You invent a new wrench that combines line wrench and ratchet. What problem does it solve?

- a) Loosening tubing fittings with speed
- b) Hammering bolts
- c) Filing edges
- d) Cutting wires

49. Imagine redesigning hacksaw blades. What feature ensures safety?

- a) Teeth pointing away from handle and tightened
- b) Loose blade for flexibility
- c) Teeth pointing both ways
- d) Random tooth spacing

50. If creating a new engine design, which priority should guide you?

- a) Efficiency and reduced pollution
- b) Increased weight
- c) More complicated parts
- d) Ignoring cooling



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Fill the table with the correct answer.(5pts each)

51. F.O. 1-3-4-2

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52. F.O. 1-3-4-2

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53. F.O. 1-2-4-3

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54. F.O. 1-2-4-3

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ESSAY: 10pts each

55. Discuss the operating principle of a 4 stroke cycle engine.

56. Discuss the operating principle of a 2 stroke cycle engine.

57. What is the relationship between crank shaft and cam shaft? Elaborate your answer.