

Sample Question Paper

1. The air standard cycle that describes the functioning of an SI engine is
 - a. Brayton cycle
 - b. Carnot cycle
 - c. Diesel cycle
 - d. Otto cycle

2. An engine produces 12 kW indicated power. If its mechanical efficiency is 90%, the frictional power loss will be
 - a. 1 kW
 - b. 1.2 kW
 - c. 10.8 kW
 - d. 12 kW

3. A Carburetor can be found in
 - a. SI engines only
 - b. CI engines only
 - c. Steam engines only
 - d. All IC engines

4. In a diesel engine, the mixing of air-fuel takes place in
 - a. Carburetor
 - b. Engine cylinder
 - c. Injector
 - d. Intake manifold

5. The float in the carburetor of an engine controls
 - a. Flow rate of air
 - b. Flow rate of fuel
 - c. Flow rate of air-fuel mixture
 - d. Level of petrol in the float chamber.

6. During Idling, a petrol engine requires
 - a. Rich mixture
 - b. Lean mixture
 - c. Chemically correct mixture
 - d. Any air-fuel mixture can be used

7. An engine requires a lean air mixture during
 - a. Idling
 - b. Starting
 - c. Cruising
 - d. Accelerating

8. For a conventional S.I. engine, what is the value of fuel-air ratio in the normal operating range?
 - a. 0.056 – 0.083
 - b. 0.083 – 0.56
 - c. 0.0056 – 0.83
 - d. 0.056 – 0.83

9. Nozzles for injecting fuel are widely used in the -----engines.
 - a. CI engines
 - b. CI and SI engines
 - c. SI engines
 - d. Can't say anything

10. According to the working principle of battery ignition system, find the correct order from the following
 - a. Charging the condenser -> discharging the condenser -> breaker points are closed
 - b. Charging the condenser -> breaker points are closed -> discharging the condenser
 - c. Breaker points are closed -> charging the condenser -> discharging the condenser
 - d. Discharging the condenser -> charging the condenser -> breaker points are closed

11. In the battery ignition system, the camshaft drives
 - a. breaker points
 - b. Distributor
 - c. Condenser
 - d. primary winding

12. What is the purpose of employing supercharging for an engine?
 - a. To provide forced cooling air
 - b. To raise exhaust pressure
 - c. To inject excess fuel for coping with higher load
 - d. To supply an intake of air at a density greater than the density of the surrounding

atmosphere

13. The maximum temperature in the I.C. engine cylinder is of the order of.....
 - a. 500-1000C
 - b. 1000-1500C
 - c. 1500-2000C
 - d. 2000-2500C
14. The temperature of interior surface of cylinder wall in normal operation is not allowed to exceed.....
 - a. 80 °C
 - b. 120 °C
 - c. 180°C
 - d. 240°C
15. The outlet cooling water temperature for large engines is
 - a. about 50°C
 - b. 60 to 65°C
 - c. 80°C
 - d. Above 100°C
16. Engine pistons are usually made of aluminium alloy because it
 - a. Is lighter
 - b. Wear is less
 - c. Absorbs shocks
 - d. Is stronger
17. The accumulation of carbon in a cylinder results in increase of
 - a. Clearance volume
 - b. Volumetric efficiency
 - c. Ignition time
 - d. Effective compression ratio
18. Which is more viscous lubrication oil?
 - a. SEA 30
 - b. SAE 50
 - c. SAE 70
 - d. SAE 80
19. The empirical relation for frictional mean effective pressure is given by
 - a. $f_{mep}=A+BN^2+CN^2$
 - b. $f_{mep}=A+BN^2+CN$

- c. $f_{mep} = BN_2 + CN_2 - A$
d. $f_{mep} = A + BN + CN_2$
20. Which of the following symptoms show that the combustion in air is necessarily complete?
- Absence of Oxygen in exhaust
 - Absence of Nitrogen in exhaust
 - Absence of free carbon in exhaust
 - Absence of carbon monoxide in exhaust
21. During a Morse test on a 4 cylinder engine, the following measurements of brake power were taken at constant speed.
- All cylinders firing 3037 kW
Number 1 cylinder not firing 2102 kW
Number 2 cylinder not firing 2102 kW
Number 3 cylinder not firing 2100 kW
Number 4 cylinder not firing 2098 kW
- The mechanical efficiency of the engine is
- 91.53%
 - 85.07%
 - 81.07%
 - 61.22%
22. Besides mean effective pressure, the data needed for determining the indicated power of an engine would include
- Piston diameter, length of stroke and calorific value of fuel
 - Piston diameter, specific fuel consumption and calorific value of fuel
 - Piston diameter, length of stroke and speed of rotation
 - Specific fuel consumption, speed of rotation and torque
23. A spark plug gap is kept from.....
- 0.3 to 0.7 mm
 - 0.2 to 0.8 mm
 - 0.4 to 0.9 mm
24. An engine indicator is used to determine.....
- Speed
 - Temperature
 - Volume of cylinder
 - E.m.e.p. and I.H.P.
25. Paraffins have molecular structure of
- chain saturated

- b. chain unsaturated
- c. ring saturated
- d. ring unsaturated