

AUTO ENGINEERING (627)
Sample Question Paper
Class XII - 2018-19

Time: 2 Hours

M.M.: 50

General Instructions:

1. Question paper is divided into two sections: Section-A and Section- B.
2. **Section-A:**
 - i. Multiple choice question/Fill in the blanks/Direct Questions of 1 mark each. Answer any 10 questions out of the given 12 questions.
 - ii. Very Short Answer of 2 marks each. Answer any 5 questions from the given 7 questions.
 - iii. Short Answer of 3 marks each. Answer any 5 questions from the given 7 questions.
3. **Section-B:** Long/Essay type questions of 5 marks each. Answer any 3 questions from the given 5 questions.
4. All questions of a particular section must be attempted in the correct order.
5. Please check that this question paper contains 31 questions out of which 23 questions are to be attempted.
6. The maximum time allowed is 2 hrs.

SECTION –A

Mark the correct answer (1mark each).

Answer any 10 questions out of the given 12 questions:

1. The vehicles which are generally running in hilly-road, are given. (1)
 - a. Positive camber
 - b. Zero camber
 - c. Negative camber
 - d. None of the above
2. Maximum inclination of propeller shaft fitted with Hooke's Joint (cross or spider type Joint) is (1)
 - a. 10°
 - b. 15°
 - c. 20°
 - d. 25°
3. The purpose of a suspension damper is to (1)
 - a. Resist the road shocks
 - b. Reduce the 'bump' stroke of the spring
 - c. Absorb the energy stored in the spring
 - d. All above.

4. The battery case is made of _____ . (1)
a. Poly-propylene
b. Hard-rubber
c. Plastic base materials
d. Any of the above materials
5. The distributor serves the following purposes in the ignition system (1)
a. It operates break and make mechanism
b. It distributes high tension current to spark plug at correct time
c. both (a) and (b)
d. None of above
6. The oil forms an oil film at the metal surface to reduce the _____ between the metal surfaces. (1)
a. Speed.
b. Friction.
c. Both a and b.
d. None of above.
7. Generally, when the temperature is increased, the viscosities of oil will _____ (1)
a. remains same.
b. increase.
c. decrease.
d. None of above.
8. The _____ of pressure cap opens to allow reverse flow back into the radiator when the coolant temperature drops after engine operation. (1)
a. pressure valve
b. vacuum valve
c. both a and b
d. none of above.
9. If the camber on the two front wheels is not equal, the vehicle will try to pull towards the side where. (1)
a. The camber is higher.
b. The camber is lower
c. Both (a) & (b)
d. None of the above
10. For a private new vehicle the initial fitness certificate is valid for _____ (1)
a. 20 years
b. 15 years
c. 10 years
d. 5 years
11. The violation of which of the following road safety signs is a legal offence? (1)
a. Mandatory signs
b. Cautionary signs
c. Information signs
d. All of the above

12. _____ allows coolant to circulate freely only within the block (1)
until the operating temperature is reached.
- a. Radiator
 - b. Hose pipe
 - c. Thermostat
 - d. none of the above.

Very Short Questions: (2 marks each).

Answer any 5 questions out of the given 7 questions:

13. What are the functions of a vehicle brake system? (2)
14. What are the functions of propeller shaft? (2)
15. Why is the 'cooling' of Engine done? (2)
16. What are the functions of suspension system? (2)
17. Write the purpose of providing King Pin inclination or steering axis inclination? (2)
18. Write the eligibility for obtaining a driving licence? (2)
19. Write the function of cut-out. (2)

Short Questions: (3 marks each).

Answer any 5 questions out of the given 7 questions:

20. Define hoist. How we can classify hoists? (3)
21. What are the main objectives of lubrication system? (3)
22. Write merits and demerits of air cooling system? (3)
23. Write at least three functions of rear axle? (3)
24. Define Toe-angle (Toe-in and Toe-out) with diagram. (3)
25. How the suspension springs are classified? (3)
26. Write the classification of spark plug according to the heat range. (3)

SECTION -B

Long/Essay type questions (5 marks each).

Answer any 3 questions out of the given 5 questions:

27. With a neat sketch explain the construction and working of an air compressor. (5)
28. With a neat sketch explain the construction and working of a hydraulic hoist. (5)

29. Draw a circuit diagram of battery ignition system and explain its working. **(5)**

30. Draw the traffic signs for any *two* of the following **(5)**

- a) No parking
- b) Overtaking prohibited
- c) Speed Limit

31. Explain in brief techniques of driving **(5)**

- a) At night
- b) In slippery Condition