



C20-A-302

7202

BOARD DIPLOMA EXAMINATION, (C-20)

OCTOBER/NOVEMBER—2023

DAE – THIRD SEMESTER EXAMINATION

AUTOMOBILE POWER PLANTS

Time : 3 Hours]

[Total Marks : 80

PART—A

3×10=30

- Instructions :** (1) Answer **all** questions.
(2) Each question carries **three** marks.
(3) Answers should be brief and straight to the point and shall not exceed five simple sentences.

1. List out any six components of an IC engine.
2. What is combustion chamber? State its functions.
3. State the functions of air cleaner.
4. What is muffler? Mention different types of it.
5. Draw the neat diagram of simple carburettor and label the parts.
6. What is air injection? What type of engine uses this injection?
7. What are the desirable properties of lubricants used in IC engines?
8. How does air cooling system work in an engine?
9. How do you rate the IC engine fuels? What is the basis for that rating?
10. What is the importance of fuel additives? Mention different types of fuel additives.

- Instructions :** (1) Answer *any five* questions.
(2) Each question carries **eight** marks.
(3) Answers should be comprehensive and criterion for valuation is the content but not the length of the answer.

- 11.** (a) What is firing order? Explain its significance.
(b) Draw the pressure cooling system used in an engine and label the parts.

(OR)

- (c) Write the function and material of (i) cylinder head and (ii) crank shaft.
(d) What is the function of thermostat? Name different types of it.

- 12.** (a) Explain the working principle of 4-stroke diesel engine with neat sketches.

(OR)

- (b) Mention different types of combustion chambers in petrol engine. Explain any one of them with a neat sketch.

- 13.** (a) Draw the line diagram of petrol engine fuel supply system and label the parts. Mention the function of each component of it.

(OR)

- (b) Explain the construction and working of mechanical fuel feed pump with a neat sketch.

- 14.** (a) What is the function of fuel injector? Briefly explain about different types of injection nozzles used in diesel engines with neat sketches.

(OR)

- (b) What are the requirements of fuel injection system in CI engines? Mention different types of fuel injection systems used in CI engines.

15. (a) Describe construction and working of forced feed lubrication system with a neat sketch.

(OR)

- (b) What is the necessity of filter in engine lubrication system? Differentiate between full flow and by-pass filtration system.

PART—C

10×1=10

- Instructions :** (1) Answer the following question.
(2) The question carries **ten** marks.
(3) Answer should be comprehensive and the criterion for valuation is the content but not the length of the answer.

16. Explain the stages of combustion in CI engines with necessary diagrams.

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