

FIRST SEMESTER EXAMINATION 2025 -26
MECHANICAL MAINTENANCE
PAPER-II

STD. : XII

DATE : 15/10/2025

ROLL No. : _

MARKS: 40

TIME : 2 ½

Instructions:

- (1) All questions are compulsory.
- (2) Figures to the right indicate full marks.
- (3) Illustrate your answers with neat sketches wherever necessary.
- (4) Use of drawing instruments, mathematical tables etc. is permitted.
- (5) Assume suitable data, if necessary.

Answer the following (Any Four)

(4)

Fill in the blanks with appropriate words from those given below

- 1) (a) In four stroke engine inlet valves and outlet valves are actuated by the _____.
(valves, piston, cams)
- b) _____ centrifugal pump work against head up to 15 m.
(Low lift, Medium lift, High lift)

State 'True' or 'False' and correct it, if false.

- (c) An air compressor, as the name indicates, is a machine used to compress air to a high pressure.
- (d) Pump is a mechanical device to increase the pressure energy of a liquid.

Match the Pairs:

"A"

"B"

- | | |
|----------------|------------------------------------|
| (e) S I engine | (i) Digital twin ignition system. |
| (f) C I engine | (ii) Spark ignition system. |
| | (iii) Compression ignition system. |

2) Answer the following in about 8 to 10 lines each (Any Two)

(6)

- (a) Explain the working of four stroke diesel engine with neat sketch.
- (b) Explain the working of reciprocating pump with the help of neat sketch.
- (c) What are the various uses of compressed air in industries?

- 3) Answer the following in about 8 to 10 lines each (Any Two) (6)
- (a) Explain with a neat diagram the working cycle of four stroke petrol engine.
 - (b) Write a short note on priming of centrifugal pump.
 - (c) Write short note on the following.
 - a) Winches,
 - b) Jacks,
 - c) Conveyors
- 4) Answer the following (Any Three) (6)
- (a) Write a short note on care and maintenance of I. C. engines.
 - (b) List the parts of centrifugal pump and state the functions of each in brief.
 - (c) List the tools and equipment used in plumbing.
 - (d) Write a short notes on the importance of maintenance?
- 5) Answer the following in about 5 to 6 lines each (Any Three) (6)
- (a) Why does I. C. engine need cooling of cylinder?
 - (b) Explain functions of strainer and foot valve in centrifugal pump.
 - (c) What are the general rules for safe material handling?
 - (d) What are the various types of pipes used in plumbing.
- 6) Answer the following (Any Two) (12)
- (a) Differentiate between petrol engine and diesel engine.
 - (b) Explain different types of impeller used in centrifugal pumps with neat sketch.
 - (c) Describe the working of simple reciprocating compressor with the help of a neat sketch.