

FIRST SEMESTER EXAMINATION 2024 -25
MECHANICAL MAINTENANCE

PAPER-1

STD : XII
DATE : 25/10/24

ROLL No. : _____

MARKS : 40
TIME : 2 ½ hrs

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.

Q.1 Answer the following (any four) (4)

Fill in the blanks with appropriate words from those given below

1. loading is the term related to _____.
(cutter, drill, grinding wheel)
2. The bed of Lathe machine is made of _____.
(cast iron, wrought iron, mild steel)

Match the pairs

'A'

1. Reaming
2. Drilling

'B'

- (a) Sizing and finishing a hole
- (b) Producing a cylindrical hole
- (c) Adjustable machine tool

State whether True or False and correct it if False

1. Tap is used to cut Internal external threads.
2. While engaging back gears lock pin should be disconnected.

Q.2 Answer the following in about 8 to 10 lines each (any two) (6)

- (a) Enlist different causes of vibration in machines
- (b) Give specification of lathe with neat sketch?
- (c) State the function of good cutting fluids.

Q.3 Answer the following in about 8 to 10 lines each (any two) (6)

- (a) What are the operation you can perform on lathe machine?
Explain any two with neat sketch.
- (b) The length of work is 800mm, length on which taper is required is 220mm, conicity is 1:100. Determine setover.
- (c) What are the different types of mandrels used in lathe machine?
Explain any one of them with neat sketch.

Q.4 Answer the following (any three) (6)

- (a) Enlist different types of lathe centres draw neat sketch of any one.
- (b) What do you mean by abrasives? What are the different types of abrasives?
- (c) Explain centreless grinding with neat sketch.
- (d) Explain the advantages of doing maintenance.

Q.5 Answer the following in about 5 to 6 lines each (any three)

(6)

- (a) Enlist different types of grinding wheel, draw sketch of any two.
- (b) Write short notes on 'Three Jaw Chuck' with neat sketch.
- (c) Differentiate between shaper and planer.
- (d) Draw a neat sketch of column and knee type milling machine and label the parts.

Q.6 Answer the following (any two)

(12)

- (a) Explain the tool and cutter grinder with the help of a neat sketch and also explain its main parts.
- (b) Explain external thread cutting operation on lathe.
- (c) Explain radial drilling machine with neat sketch.