

1167

April 2025

Time - Three hours
(Maximum Marks: 100)

- N.B.
1. Answer any fifteen questions under Part-A. All questions carry equal marks. (15X2=30)
 2. Answer all questions, choosing any two sub-divisions from each question under Part-B. All questions carry equal marks. (5X14=70)(7+7)

PART- A

1. Who is a mechanical engineer?
2. Write any two roles of a mechanical engineer in automobile industry.
3. List out any two functions of mechanical engineer in materials management.
4. List out any two opportunities for a mechanical engineer in quality sector.
5. Write down any two electrical properties of metals.
6. What is meant by hot working?
7. Define brazing.
8. List out any two applications of ceramic materials.
9. Write down any four parts of lathe.
10. Differentiate turning and taper turning.
11. Define milling.
12. Write short notes on lathe bed.
13. Draw the flat belt drive.
14. Write any two applications of chain drive.
15. List any two properties of lubricants.
16. State the purpose of lubrication.
17. Differentiate G codes and M codes.
18. Write any two applications of CNC.
19. What is FDM?
20. Define stereolithography.

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PART- B

21. (a) What are the roles and responsibilities of a mechanical engineer?
(b) Write about the scope and opportunities for mechanical engineer in (i) automobile sector (ii) power generation sector.
(c) Write about the scope and opportunities for mechanical engineer in (i) design sector (ii) logistics sector.
22. (a) Describe the working of drop hammer with a neat sketch.
(b) Explain the wire drawing process with a neat sketch.
(c) What are the various types of materials? Explain any three of them.
23. (a) Describe the construction of lathe machine with a neat sketch.
(b) Explain about upright drilling machine with a neat sketch.
(c) Draw a neat sketch of vertical milling machine and explain its working.
24. (a) Explain the spur and helical gear drives with neat sketch.
(b) Explain about ring oiler lubrication method with a neat sketch.
(c) What are the types of belt drive? Explain.
25. (a) Explain about CNC machine.
(b) Explain the process of 3D printing.
(c) What is additive manufacturing? Explain.
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