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Question Paper Code : 70164

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2021.

Ninth Semester

Mechanical Engineering (Sandwich)

AT 6071 — MANUFACTURE OF AUTOMOTIVE COMPONENTS

(Regulations 2013)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. List the factors to be considered for piston materials.
2. What are the advantages of thermal barrier coating of engine head and valves?
3. What are the materials used for production of piston pins?
4. What are the functions of tappets?
5. Compare gear hobbing and gear shaping processes.
6. What is gear sharing?
7. How the chassis is manufactured?
8. State the necessity of heat treatment process.
9. List any four plastic materials used in automobile parts.
10. What are the main sources of exhaust gases in automobiles?

PART B — (5 × 13 = 65 marks)

11. (a) Discuss the engine piston with respect to manufacturing method and machining processes using neat sketches.

Or

- (b) Explain any one method of thermal barrier coating of engine head with respect to construction, working and materials sketches.

12. (a) Sketch and explain the sequential activities in production of connecting rod.

Or

- (b) Explain the functions and production method of pushrod, rocker arm and tappets.

13. (a) Explain the various materials and manufacturing methods of a single plate clutch.

Or

- (b) Briefly explain about the various methods of gear manufacturing processes.

14. (a) Describe the manufacture of ladder chassis members using neat sketch.

Or

- (b) Discuss the manufacture of tyres with suitable sketches.

15. (a) Explain the steps involved in manufacture of body panels with neat sketches.

Or

- (b) Explain the applications of robots in auto body weldment with merits.

PART C — (1 × 15 = 15 marks)

16. (a) Describe the steps involved in manufacture of gear box components with neat sketch.

Or

- (b) Explain the gear broaching process with neat sketch.
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