

# GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-IV (NEW) EXAMINATION – SUMMER 2024

Subject Code:3140204

Date:03-07-2024

Subject Name: Automotive Manufacturing Processes and Technology

Time:10:30 AM TO 01:00 PM

Total Marks:70

Instructions:

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed.

MARKS

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|------------|--|-----------|
| <b>Q.1</b> | (a) Define super finishing process.  | <b>03</b> |
|            | (b) Write the advantages of CNC machines.  | <b>04</b> |
|            | (c) Explain the working of apron mechanism of a lathe machine with a neat sketch.            | <b>07</b> |
| <b>Q.2</b> | (a) List various operations which can be performed on a drilling machine.                    | <b>03</b> |
|            | (b) Explain the barrel tumbling process with a neat sketch.                                  | <b>04</b> |
|            | (c) Differentiate between shaper and planner.  | <b>07</b> |
|            | <b>OR</b>  |           |
|            | (c) Explain various operations of milling machine with neat sketches.                        | <b>07</b> |
| <b>Q.3</b> | (a) What is a pattern with respect to casting?   | <b>03</b> |
|            | (b) Explain cope and drag pattern with neat sketches.  | <b>04</b> |
|            | (c) Explain centrifugal casting process with a neat sketch.                                  | <b>07</b> |
|            | <b>OR</b>  |           |
| <b>Q.3</b> | (a) What is a core with respect to casting process.  | <b>03</b> |
|            | (b) Explain the core making process with a suitable example.                                 | <b>04</b> |
|            | (c) Explain the investment casting process with neat sketches.                               | <b>07</b> |
| <b>Q.4</b> | (a) Define cold working process.   | <b>03</b> |
|            | (b) Differentiate between hot working and cold working.                                      | <b>04</b> |
|            | (c) Explain wire drawing and tube drawing processes with neat sketches.                      | <b>07</b> |
|            | <b>OR</b>  |           |
| <b>Q.4</b> | (a) What is rolling?   | <b>03</b> |
|            | (b) Explain the forward extrusion process with a neat sketch.                                | <b>04</b> |
|            | (c) Explain the principle of forging with a neat sketch and list various forging operations. | <b>07</b> |
| <b>Q.5</b> | (a) Write full form of TIG and MIG with respect to welding processes.                        | <b>03</b> |
|            | (b) Explain the principle of oxy-acetylene gas welding process with a neat sketch.           | <b>04</b> |
|            | (c) Explain the injection moulding process used for making plastic products.                 | <b>07</b> |
|            | <b>OR</b>  |           |
| <b>Q.5</b> | (a) Define thermosetting plastics.   | <b>03</b> |
|            | (b) Briefly describe the general properties of plastics.                                     | <b>04</b> |
|            | (c) Explain the submerged arc welding process with a neat sketch and write its applications. | <b>07</b> |

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