

Exam Date & Time: 25-Jan-2023 (09:30 AM - 12:30 PM)



# MANIPAL ACADEMY OF HIGHER EDUCATION

THIRD SEMESTER B.TECH END SEMESTER MAKEUP EXAMINATIONS, JAN 2023

**MANUFACTURING TECHNOLOGY [MME 2152]**

**Marks: 50**

**Duration: 180 mins.**

**A**

**Answer all the questions.**

Instructions to Candidates: Answer ALL questions Missing data may be suitably assumed

- 1) How a grinding wheel is marked (coded)? Describe Indian standard marking system. (4)
  - A)
  - B) Briefly describe the principle of ultrasonic machining process with the help of a neat sketch. (3)
  - C) With a neat sketch, explain injection moulding process using thermoplastic material. (3)
- 2) What is Rapid prototyping? Explain the fused deposition modeling process with a neat sketch. (4)
  - A)
  - B) With a neat sketch differentiate between orthogonal and oblique cutting. (3)
  - C) Draw a neat sketch of permanent mould casting process and explain the same. (3)
- 3) Index 57 divisions by compound indexing using index plate 1 with hole circles 15,16,17,18,19,20. (4)
  - A)
  - B) Illustrate with a neat sketch the function of back gear mechanism used on lathe. (3)
  - C) Define and classify the welding process. (3)
- 4) What is Foundry? Explain the basic steps involved in sand casting process with the help of neat sketch. (4)
  - A)
  - B) Sketch and describe in brief of a radial drilling machine. (3)
  - C) Explain the grain fineness test with the help of a neat sketch. (3)
- 5) Explain with a schematic diagram, the principle of arc welding process. (4)

- A)
- B) In orthogonal cutting test, the cutting force = 900N, The thrust force = 600N and chip shear angle is  $30^\circ$ . What will be the shear force? (3)
- C) Differentiate the hot and cold working process of thin metals. (3)

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