Total No. of Questions – [8] Total No. of Printed Pages: 02

G.R. No.	

Paper code - U219-153 (BE-FBPS)

DECEMBER 2019/ENDSEM (BACKLOG)

S. Y. B. TECH. (MECHANICAL ENGINEERING) (SEMESTER - I)

COURSE NAME: MANUFACTURING PROCESSES

COURSE CODE: MEUA21173

(PATTERN 2017)

Time: [**2 Hours**] [Max. Marks: **50**]

(*) Instructions to candidates:

1) **Answer Q.1, Q.2, Q.3, Q.4, Q.5 OR Q.6, Q.7 OR Q.8**
2) **Figures to the right indicate full marks.**
3) **Use of scientific calculator is allowed**
4) **Use suitable data where ever required**

Q.1 a) Explain commonly used materials for pattern making. State advantages and limitations of for each material. [6]

OR

b) State advantages and limitations of investment casting process. Also, state the applications of the process. [6]

Q.2 a) Describe contact length, backward and forward slip in rolling operation with schematic. [6]

OR

b) With sketch differentiate the universal rolling mill with planetary rolling mill. [6]

Q.3 a) With sketche compare i) notching and perforating and ii) lancing and embossing sheet metal working operations. [6]

OR

b) What is strip layout? State different allowances to be considered while preparing strip layout with sketch. [6]

Q.4 a) Sketch injection moulding process and state its applications. [4]

OR

b) With schematic write down the steps to be followed in compression moulding for thermoplastics. [4]

Q.5 a) What are the advantages and disadvantages of welding compared to other types of assembly operations? [6]

b) State the advantages of brazing over the welding process. [4]

c) State the importance of electrodes and flux used in welding. [4]

OR

Q.6 a) Describe with sketch any one welding process which uses non consumable electrodes. [6]

b) State advantages and limitations of adhesive bonding process. [4]

c) What is the heat-affected zone in a fusion weld? [4]

Q.7 a) What is orthogonal cutting operation? Why orthogonal cutting model is useful in the analysis of metal machining? [6]

b) Explain with sketch external thread cutting operation to be carried on lathe. [4]

c) Describe the difference between up milling and down milling. [4]

OR

Q.8 a) Draw the standard twist drill geometry and show spiral flutes, point angle, helix angle, chisel edge, cutting edges and web thickness. [6]

b) Calculate the change gears for cutting two start right hand threads of 1.4 mm pitch on a lathe having 6 mm pitch of lead screw. Available gears are 20 to 120 teeth in steps of 5 teeth. [4]

c) An engine lathe is used to turn a cylindrical work part 150 mm in diameter by 500 mm long. Cutting speed = 2.50 m/s, feed = 0.30 mm/rev, and depth of cut = 3.0 mm. Determine (a) cutting time and (b) metal removal rate. [4]

-------- All the Best -------