Ex/PROD/PC/B/T/313/2024

B.E. PRODUCTION ENGINEERING
THIRD YEAR
FIRST SEMESTER EXAM 2024

Mass Production Technology& Automation

Time:3 Hrs. Full Marks -100

Answer any **5** Q.s

1. a) What are the different orders of automation? Explain each with examples. 10
b) What are the different types of jigs? Explain. 10
2. a) Differentiate betn. the Capstan Lathe & Turret Lathe with description & neat sketches. 10
b) Describe:
The Blow Moulding Process, Circular die rolling process (of producing screw threads). 5+5
3. a) What are the safety arrangements of power presses, that are considered while designing it? 4
b) What are the basic elements of an adaptive control loop? 3
c) Describe a fly press, with a sketch. 3
d) Explain each term with their meaning & examples:
Operation (or process), Manufacturing process, Job (or station), Tools (or tooling), Production System. 10
4. a) In order to determine the economic justification of any special tooling (jigs & fixtures), what are the factors, those must be considered? 5
b) Write short notes on:
Screw thread grinding process, Open flash method of moulding, Interchangeability. 5X3
5. a) What is generating? Write shortly about generation by rack. 2+3
b) What are the chief factors, those influence the disposition of blanks on strip width? Explain each. 8
c) How is the capacity of a fly press expressed? Is the expression misleading? 2
d) Write the differences between blanking & piercing. 5
6. a) Describe:
Thread Milling process, Sunderland method of cutting gears. 5+5

b) Describe the production of screw threads, by die heads. 4

c) Write whether jigs, or, fixtures are needed for the following processes, citing reasons: Drilling, Boring, Turning, Milling. 6

7. a) Write the differences between Transfer Moulding& Compression Moulding. 5

b) Write short notes on:

The Gear Shaping Method, The Gear Hobbing Method, Automatic Gear Cutting Machine. 5X3

8.Write the names of 2 prod. methods for producing each shape/feature of the following: Parts with sharp features, Square edge, Parts with cavities, Thin hollow shapes, Flat surfaces, Detailed surface features, Small holes, Tubular shapes, Openings in thin sheets, Curvature on thin sheets. 2X10