



R20 Regulation

Subject code: 3P4CD

# TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

(Autonomous, Accredited by NAAC with 'A+' Grade)

B.Tech IV Semester Supplementary Examinations, December 2025

## MANUFACTURING PROCESS (ME)

Maximum Marks: 70

Date: 23.12.2025

Duration: 3 hours

- Note:
1. This question paper contains two parts A and B.
  2. Part A is compulsory which carries 20 marks. Answer all questions in Part A.
  3. Part B consists of 5 Units. Answer any one full question from each unit.
  4. Each question carries 10 marks and may have a, b, c, d as sub questions.

### Part-A

All the following questions carry equal marks (10X2M=20 Marks)		Marks	CO	BTL
1	List the advantages of metallic pattern materials.	2M	1	L1
2	What are the applications of sweep pattern?	2M	1	L1
3	Differentiate between Welding and soldering.	2M	2	L1
4	Write the basic principle of resistance welding?	2M	2	L1
5	What are the different ways by which the metal is transferred in gas metal arc welding?	2M	3	L1
6	What are the advantages of laser beam welding?	2M	3	L1
7	What is strain hardening?	2M	4	L1
8	Write the coining and embossing operations.	2M	4	L1
9	What is fullering operation?	2M	5	L1
10	Differentiate drop and press forging.	2M	5	L1

### Part-B

Answer All the following questions. (5X10M=50Marks)		Marks	CO	BTL
11	Explain the principle of investment casting with necessary sketches.	10M	1	L2
OR				
12	Describe the working of cupola with sketch.	10M	1	L2
13	Sketch and explain LASER welding.	10M	2	L2
OR				
14	a) Explain forge welding operation and its limitations. b) How the heat energy is used in Thermit welding process?	4M 6M	2	L2
15	a) Discuss any one nondestructive testing of welds. b) Distinguish soldering and brazing process and also state its applications.	5M 5M	3	L2
OR				
16	a) Explain induction welding operation. b) Explain diffusion welding operation with its applications.	4M 6M	3	L2

17	a) What are the various roll pass sequences? b) Explain the sequences used in wire and tube drawing operations.	5M 5M	4	L2
OR				
18	Discuss the mechanics used in finding the angle of bite of the rolling operation.	10M	4	L2
19	What are the various stages encountered in drop forging of lever.	10M	5	L2
OR				
20	Explain in detail Forging hammers.	10M	5	L2