Roll No											

PRESIDENCY UNIVERSITY
BENGALURU

SET-A

SCHOOL OF ENGINEERING
END TERM EXAMINATION – MAY/JUNE 2024

Semester: Semester VIII - 2020

Course Code: MEC3055

Course Name: - Product Design for Manufacturing and Assembly

Program: B. Tech.

Date: May 29, 2024

Time: 1:00 PM -4:00 PM

Max Marks: 100

Weightage: 50%

Instructions:
(i) Read all questions carefully and answer accordingly.
(ii) Question paper consists of 3 parts.
(iii) Scientific and non-programmable calculator are permitted.
(iv) Do not write any information on the question paper other than Roll Number.

PART A

ANSWER ANY FIVE QUESTIONS **5QX2M=10M**

1. What is scientific method? (CO1) [Knowledge]

2. Define creativity in design. (CO1) [Knowledge]

3. List Industrial design recommendations in turning guidelines. (CO2) [Knowledge]

4. List the types of standard twist drills. (CO2) [Knowledge]

5. Define Pattern. (CO3) [Knowledge]

6. List parting line parameters. (CO3) [Knowledge]

7. Write the importance of undercuts in powder metallurgy design parts. (CO4) [Knowledge]

PART B

ANSWER ANY SIX QUESTIONS **6QX10M=60M**

8. With suitable example explain any 2 steps of engineering design process. (CO1) [Comprehension]

9. Explain properties of core design.

(CO1) [Comprehension]

10. With a neat sketch explain any one design guidelines of milling.

(CO2) [Comprehension]

11. Write a note on reduction of machined area in machining design consideration.

(CO2) [Comprehension]

12. With a neat sketch explain any 2 design consideration in casting.

(CO3) [Comprehension]

13. Write a note on in-housing component in casting design.

(CO3) [Comprehension]

14. With a neat sketch explain die geometry and design features for metal powder compaction.

(CO4) [Comprehension]

15. With a neat sketch explain the different Zones of Welding.

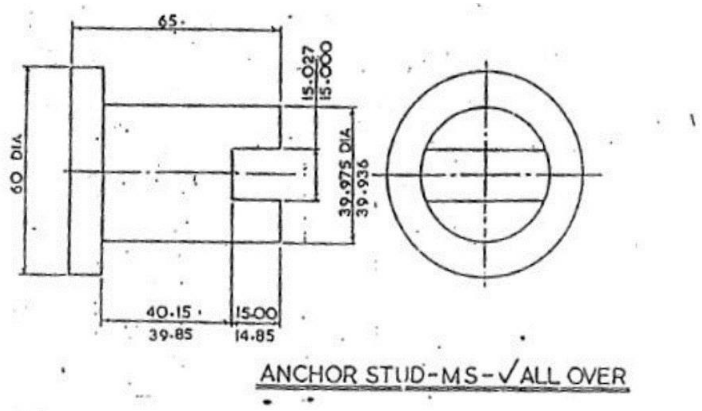
(CO4) [Comprehension]

PART C

ANSWER ANY TWO QUESTIONS **2QX15M=30M**

16. The anchor Stud shown in **fig** is to be manufactured in batches of 100.

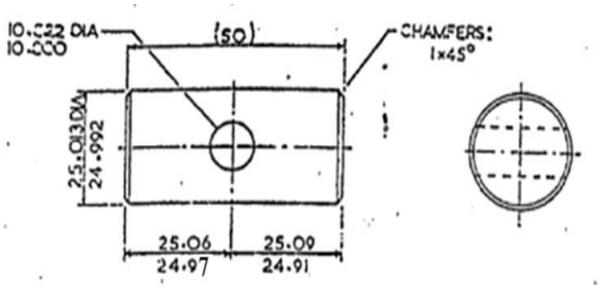
1. Prepare a suitable operation sequence layout for the stud.
2. Show the three possible datum faces for machining the 15mm wide groove and appropriate dimensional layout for each.
3. State the most desirable datum face and why.



(CO1) [Application]

17. Re design the following Pin component consists of two machining processes.

1. Turning, i.e turn, face and chamfer
2. Drilling, i.e drill and ream



(CO1) [Application]

Two Linear Functional

18. With a neat sketch explain countersunk head screws.

(CO3) [Application]