|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Roll No |  |  |  |  |  |  |  |  |  |  |  |



PRESIDENCY UNIVERSITY BENGALURU

SCHOOL OF ENGINEERING

SUMMER TERM END TERM EXAMINATION - AUGUST 2024

|  |  |
| --- | --- |
| **Semester :VIII** | **Date :05-08-2024** |
| **Course Code :MEC 3055** | **Time :1:00PM-4:00PM** |
| **Course Name :**Product Design and Manufacturing Assembly | **Max Marks :100** |
| **Program :B Tech** | **Weightage :50%** |

**Instructions:**

1. *Read all questions carefully and answer accordingly.*
2. *Question paper consists of 3 parts.*
3. *Scientific and non-programmable calculator are permitted.*
4. *Do not write any information on the question paper other than Roll Number.*

|  |  |  |  |
| --- | --- | --- | --- |
| **PART A** | | | |
| **ANSWER ANY 5 QUESTIONS 5Q X 2M=10M** | | | |
| 1 | Define design process. | (CO 1) | [Knowledge] |
|  | | | |
| 2 | List steps of engineering design process. | (CO 1) | [Knowledge] |
|  | | | |
| 3 | What is concurrent engineering? | (CO 1) | [Knowledge] |
|  | | | |
| 4 | What is scientific method? | (CO 1) | [Knowledge] |
|  | | | |
| 5 | List parting line parameters | (CO 2) | [Knowledge] |
|  | | | |
| 6 | List the casting consideration in pulley design. | (CO 2) | [Knowledge]] |
|  |  |  |  |
| 7 | Define Pattern. | (CO 2) | [Knowledge] |
|  | | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **PART B** | | | |
| **ANSWER ANY 5 QUESTIONS 5Q X 10M=50M** | | | |
| 8 | What is functional datum? Explain with a neat sketch. | (CO 1) | [Comprehension] |
|  | | | |
| 9 | Write changing datum procedure. | (CO 1) | [Comprehension] |
|  | | | |
| 10 | Write a note on standard twist drills. | (CO 1) | [Comprehension] |
|  | | | |
| 11 | With a neat sketch explain parting line design in casting. | (CO 2) | [Comprehension] |
|  | | | |
| 12 | List the Drilling design guidelines. | (CO 2) | [Comprehension] |
|  | | | |
| 13 | Write a note on welding design consideration. | (CO 2) | [Comprehension] |
|  |  |  |  |
|  | | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **PART C** | | | |
| **ANSWER ANY 2 QUESTIONS 2Q X 20M=40M** | | | |
| 14 | 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 | (CO 1) | [Application] |
|  | | | |
| 15 | Explain material selection criteria and candidate materials in material selection process. | (CO 1) | [Application] |
|  | | | |
| 16 | With a neat sketch explain the working principle of Friction Stir Welding (FSW). | (CO 2) | [Application] |
|  | | | |
|  | | | |