

Roll No



**PRESIDENCY UNIVERSITY
BENGALURU**

SET B

**SCHOOL OF ENGINEERING
END TERM EXAMINATION - JAN 2024**

Semester : Semester I - 2023

Course Code : CIV1008

Course Name : Basic Engineering Science

Program : B.Tech.

Date : 16-JAN-2024

Time : 9:30AM - 12:30 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 ALL THE QUESTIONS

5 X 2M = 10M

1. Identify any two Positive displacement pumps.
(CO3) [Knowledge]
2. What is a hard solder?
(CO3) [Knowledge]
3. Draw any multipoint cutting tool with visible cutting edges.
(CO4) [Knowledge]
4. What is Additive Manufacturing?
(CO4) [Knowledge]
5. State the objectives of the foundation.
(CO1) [Knowledge]

PART B

ANSWER ALL THE QUESTIONS

5 X 10M = 50M

6. Additive Manufacturing is a manufacturing process to add material layer by layer and milling is a metal removal process. Considering the above statements differentiate between additive and subtractive manufacturing process.
(CO3) [Comprehension]
7. Identify any 3 Metal removal process and explain them with suitable diagrams.
(CO3) [Comprehension]

8. Suresh an Engineering student is assigned with an innovative project work and he has designed the project and is struck with a task to join two thin sheets and working temperature limit is **only 300 degree** Celsius. Identify the process Suresh is planning to opt for joining sheets and also explain the same.
- (CO4) [Comprehension]
9. Tarun is riding a car powered by a diesel engine, Identify the prime mover Tarun is using and classify the same.
- (CO4) [Comprehension]
10. Construction 3D printing is a method for manufacturing construction elements or entire buildings by means of a 3D printer printing concrete, polymer, metal, or other materials, layer-by-layer. Write the benefits and challenges in 3D printing in construction.
- (CO1) [Comprehension]

PART C

ANSWER ALL THE QUESTIONS

2 X 20M = 40M

11. In a Machining operation the tool life was found to vary with the cutting speed as per the data.

CUTTING SPEED (m/min)	TOOL LIFE (min)
60	81
90	36

- a) Identify the tool life equation used to calculate the tool exponent and constant C as per tool life equation.
- b) Calculate exponent (n) and constant (C)
- c) What will be the increase in tool life if the cutting speed is reduced to 50% of the original?
- (CO3) [Application]
12. In an experiment ,cart travels over a designed track. At point A, the cart is 100 m above the ground and travelling at 10 m/sec. Identify which energies are considered for the problem and why?
- a) Identify which energies are considered for the problem and why?
- b) What is the velocity at point B when the cart reaches the ground.
- c) What is the velocity of the cart at point C when the cart reaches a height of 50 m?
- d) What is the maximum height the cart can reach before the cart stops at point D.

(CO4) [Application]