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**PRESIDENCY UNIVERSITY
BENGALURU
SCHOOL OF ENGINEERING
END TERM EXAMINATION – AUGUST 2024**

Semester : II SEM	Date :20.08.2024
Course Code :MEC 5017	Time :9.30am -12.30pm
Course Name : Materials for Product Design	Max Marks :100
Program : M.Tech PDD	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 4 QUESTIONS		4Q X 5M=20M	
1	How is injection molding responsible for large volume productions of plastic parts?	(CO 1)	[Knowledge]
2	What are the benefits of using shape memory metals in aerospace sector?	(CO1)	[Knowledge]
3	Write a note on machining of composites	(CO1)	[Knowledge]
4	How is multilayer X ray lithography technique used in nanofabrication?	CO 2)	[Knowledge]
5	How are metal foams helpful in designing a product?	(CO 2)	[Knowledge]
6	Write a note on material selection process for aerospace and automotive sectors?	(CO 3)	[Knowledge]

PART B			
ANSWER ANY 5 QUESTIONS		5Q X 10M=50M	
7	Explain the process of sheet metal forming	(CO 3)	[Comprehension]
8	Describe the process of blow molding technique of making plastic components	(CO 3)	[Comprehension]
9	How are smart materials useful in designing a product?	(CO 2)	[Comprehension]
10	How do you select the materials for table legs? Discuss on all the factors	(CO 3)	[Comprehension]

	to be considered?		
11	Discuss some of the properties of high strength low alloy metals	(CO 3)	[Comprehension]
12	How do you select material for durability, wear and corrosion resistance?	(CO 1)	[Comprehension]
13	Discuss the criteria behind selection of composite materials for an innovative design.	(CO 4)	[Comprehension]

PART C

ANSWER ANY 2 QUESTIONS

2Q X 15M=30M

14	What factors are considered while selecting a material based on mechanical properties?	(CO 2)	[Comprehension]
15	Discuss the various factors to be considered while selecting a composite material for aerospace applications	(CO 3)	[Comprehension]
16	Explain the working principle behind LIGA micro fabrication process	(CO 5)	[Comprehension]