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**PRESIDENCY UNIVERSITY
BENGALURU**

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

Semester : 02	Date : 22-08-2024
Course Code : MEC5012	Time : 09:30 AM to 12:30 PM
Course Name : Reverse Engineering	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 5 QUESTIONS		5Q X 2M=10M	
1	What do you mean by "Forward Engineering"?	(CO 1)	[Knowledge]
2	List the limitations of CMM with respect to data collection for reverse engineering applications.	(CO 1)	[Knowledge]
3	Mention any four reverse engineering software that you know.	(CO 2)	[Knowledge]
4	What you mean by adaptive slicing in rapid prototyping?	(CO 3)	[Knowledge]
5	What you mean by shape error?	(CO 3)	[Knowledge]
6	Give any two key reasons for the adoption of reverse engineering by modern automotive industry.	(CO 4)	[Knowledge]
7	Why separate laws are required exclusively for reverse engineering?	(CO 5)	[Knowledge]

PART B			
ANSWER ANY 6 QUESTIONS		5Q X 10M=50M	
8	In reverse engineering, the goal is to construct the geometric 3D model from the real world object. It involves various steps and are commonly known as scanner pipeline. Explain various steps in scanner pipeline.	(CO 1)	[Comprehension]
9	Reverse engineering is an approach where the physical parts are digitized in order to obtain a virtual model. Brief about the real applications of RE based on your knowledge and understandings.	(CO 1)	[Comprehension]

10	Geometric profile of an object can be obtained either by contact or non-contact techniques. Explain non-contact type of data scanning generally used in RE with detailed classification further.	(CO 2)	[Comprehension]
11	Hardware involved in reverse engineering are broadly classified as contact and non-contact type. Explain about contact method with detailed classification further.	(CO 2)	[Comprehension]
12	The integration of reverse engineering and rapid prototyping is being used for getting product to the market quickly by resolving a long-standing conflict between design and manufacturing. Discuss in detail about the integration of RE and RP for Layer-based Model Generation.	(CO 3)	[Comprehension]
13	As per your understanding explain how reverse engineering is helpful to medical industry with a real life case example.	(CO 4)	[Comprehension]
14	Reverse engineering as it relates to computer software which is coming under legal scrutiny. Discuss in detail about the copy right law in the context of reverse engineering.	(CO 5)	[Comprehension]

PART C

ANSWER ANY 2 QUESTIONS

2Q X 20M=40M

15	Data cloud modeling and data processing in reverse engineering are very important steps in reverse engineering. Discuss in detail about data cloud modeling and data processing in the context of integrating with rapid prototyping.	(CO 3)	[Application]
16	Application of reverse engineering is not restricted to only engineering and it is there in almost every field nowadays. Automotive industry used RE for building as well as improving new products. In this context, consider the case of any automotive company that successfully used RE for their product development or improvement.	(CO 4)	[Application]
17	Legality aspects in reverse engineering is difficult to understand. Copyright laws are framed by every country and also gets amendments time and again according to the requirement. Consider any one recent cases of reverse engineering litigations and explain.	(CO 5)	[Application]