BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(END SEMESTER EXAMINATION)

CLASS: M.E. **SEMESTER : II**
BRANCH: MECHANICAL **SESSION : SP/2024**

SUBJECT: ME512 REVERSE ENGINEERING AND RAPID PROTOTYPING

TIME: 3 Hours **FULL MARKS: 50**

INSTRUCTIONS:
1. The question paper contains 5 questions each of 10 marks and total 50 marks.
2. Attempt all questions.
3. The missing data, if any, may be assumed suitably.
***4*. Before attempting the question paper, be sure that you have got the correct question paper.**
5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.

			CO	BL
Q.1(a)	What is Reverse Engineering? Explain the process of Reverse Engineering with proper diagram	[5]	1	1
Q.1(b)	Enumerate the different phases of Reverse Engineering .How is it different from forward engineering and value engineering	[5]	1	2
Q.2(a)	What are the methodologies and techniques used for Reverse Engineering? Explain any one process.	[5]	2	1
Q.2(b)	Classify the hardware methods used for scanning . How are the these methods identified for scanning a product.	[5]	2	2
Q.3(a)	Explain the optical technique for scanning . Define Triangulation.	[5]	2	2
Q.3(b)	What are NURBS in Reverse Engineering ? How are they utilized for best surface fitting?	[5]	3	2
Q.4(a)	Explain Additive Manufacturing and Rapid prototyping in context to manufacturing process. What is the basic process of fabrication using RP technique?	[5]	3	3
Q.4(b)	Explain the process of Fused Deposition modeling and its limitations and range	[5]	2	3
Q.5(a)	Explain the process of optimization through Fuzzy QFD in context to plastic consumer products.	[5]	4	4
Q.5(b)	Show any one process where you have used Reverse Engineering as a substitute to older product. Define the attributes which qualify for applying RE to the older product.	[5]	4	4

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