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GIET UNIVERSITY, GUNUPUR - 765022

B. Tech (Eight Semester – Regular) Examinations, April– 2024

BOEME8021 – Reverse Engineering

(Mechanical)

Time: 3 hrs

Maximum: 70 Marks

The figures in the right hand margin indicate marks.

PART – A: (Multiple Choice Questions)

(1 x 10 = 10 Marks)

Q.1. Answer **ALL** questions

		[CO#]	[PO#]
a. Slicing involves		CO1	PO1
(i) Orientation	(ii) Layer height		
(iii) Support structures	(iv) All the above		
b. Editing in the context of 3D modeling		CO1	PO1
(i) Lighting and rendering	(ii) Boolean operations		
(iii) Both	(iv) None		
c. Model Preparation includes		CO2	PO1
(i) Importing the model	(ii) Cleaning and repairing		
(iii) Exporting the Model	(iv) All		
d. STL file generation involves		CO2	PO1
(i) 3D modelling	(ii) Microscopes		
(iii) CAD software	(iv) All		
e. Reverse engineering hardware		CO3	PO1
(i) Disassembly tools	(ii) Circuit board probes		
(iii) Both	(iv) None		
f. Selection of Reverse engineering system		CO3	PO1
(i) Type of Object	(ii) Integration with other systems		
(iii) Data Processing and analysis	(iv) All		
g. Current techniques of Rapid Prototyping		CO4	PO1
(i) Fused Deposition modelling(FDM)	(ii) DMLS		
(iii) Binder Jetting	(iv) All		
h. Domain analysis in RE		CO4	PO1
(i) Validating the domain	(ii) Analyzing the domain		
(iii) Capturing domain Knowledge	(iv) All		
i. Phase III in Reverse Engineering stands for		CO1	PO1
(i) Scanning	(ii) Geometric Model Development		
(iii) Point Processing	(iv) None		
j. Cognitive approach to program understated stands for			
(i) Perception	(ii) Comprehension	CO2	PO1
(iii) Both	(iv) None		

PART – B: (Short Answer Questions)**(2 x 10 = 20 Marks)**Q.2. Answer **ALL** questions

	[CO#]	[PO#]
a. How do you create the Manufacturing Database	CO1	PO1
b. How do you construct the geometry	CO1	PO1
c. Explain Support structures and machine instructions	CO1	PO1
d. Write about Solid modelling	CO1	PO1
e. Explain Wireframe modelling	CO1	PO1
f. Explain defects in STL files.	CO1	PO1
g. Relate RP and RE	CO1	PO2
h. Explain Domain analysis	CO1	PO1
i. Integrating RE, Reuse and specification tool environments to RP.	CO1	PO2
j. Write about equipment involved in the Reverse Engineering technique	CO1	PO1

PART – C: (Long Answer Questions)**(10 x 4 = 40 Marks)**Answer **ALL** questions

	Marks	[CO#]	[PO#]
3. a. Explain about Display control commands.	5	CO1	PO1
b. How do you construct the geometry?	5	CO1	PO1
(OR)			
c. Explain Data base structure and content.	5	CO1	PO2
d. Explain Model preparation.	5	CO1	PO1
4. a. Explain about defects of file generation.	5	CO2	PO1
b. Explain repairing algorithms.	5	CO2	PO2
(OR)			
c. Write about advantages and limitations of STL files.	5	CO2	PO1
d. Write about Technical data generation.	5	CO2	PO2
5. a. Write about computer aided RE.	5	CO3	PO1
b. Write about Structured Light range imaging.	5	CO3	PO1
(OR)			
c. Write about selection of Reverse engineering system.	5	CO3	PO2
d. Write Reverse engineering hardware.	5	CO3	PO1
6. a. Explain current techniques and materials in Rapid Prototyping.	5	CO4	PO1
b. Write about integrating formal and structured methods involved in the RE technique.	5	CO4	PO2
(OR)			
c. Explain about Integrating RE, Reuse and specification tool environments.	5	CO4	PO1
d. Discuss in detail about Integrating formal and structured methods in RE.	5	CO4	PO2

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