KUMARAGURU
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B. E./B. TECH. DEGREE EXAMINATIONS: APRIL / MAY 2023

(Regulation 2018)

Third Semester

COMMON TO ALL BRANCHES

U18MCR0001: Fundamentals of 3D Printing

COURSE OUTCOMES

CO1: Discuss the basics concepts of 3D printing technology
CO2: Explain the basics of computer graphics
CO3: Develop CAD models for 3D printing
CO4: Select a specific material for the given application
CO5: Explain various method for designing and modeling for industrial applications
CO6: Import and Export CAD data and generate .stl file

Time: Three Hours   **Maximum Marks: 100**

Answer all the Questions:-
PART A (10 x 2 = 20 Marks)
(Answer not more than 40 words)

1.	Define 3D Printing.	CO1	[K2]
2.	List the advantages of Additive Manufacturing over Conventional Manufacturing.	CO1	[K2]
3.	Enumerate the different coordinate systems in computer graphics.	CO2	[K2]
4.	Write a short note on clipping transformation.	CO2	[K2]
5.	Define solid modelling.	CO3	[K2]
6.	Provide any four modelling softwares used in 3D printing.	CO3	[K2]
7.	Give the materials used in 3D printing.	CO4	[K2]
8.	What are the various forms of materials used in 3D printing?	CO4	[K2]
9.	List few applications of 3D printing in bio-medical domain.	CO5	[K2]
10.	Write a short note on stl format.	CO6	[K2]

Answer any FIVE Questions:-
PART B (5 x 16 = 80 Marks)
(Answer not more than 400 words)

11.	Discuss the design considerations for 3D Printing in detail.	16	CO1	[K2]
12.	Explain the various transformation that is possible in computer graphics	16	CO2	[K2]

13. Discuss the role of 3D printing in product design and rapid product development. 16 CO3 [K$_2$]

14. List the materials that can be used in 3D printing. Also list and quote examples for the different forms of materials used in 3D printing and relevant techniques. 16 CO4 [K$_3$]

15. Discuss the various industrial applications of 3D printing. 16 CO5 [K$_2$]

16. With an example explain the principle of 3D printing with respect to CAD Model generation. 16 CO6 [K$_2$]

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