Reg No.:_____   Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
First Semester M.Tech Degree Examination December 2022 (2022 Scheme)

Discipline: MECHANICAL ENGINEERING

Course Code & Name: 221TME008 CAD/CAM

Max. Marks: 60   Duration: 2.5 Hours

PART A
Answer all questions. Each question carries 5 marks   Marks

1	How has the introduction of computers improved the engineering design process? Explain with suitable justifications.	(5)
2	Why are analytical curves not usually recommended for design purposes?	(5)
3	What is a Boolean operation in constructive solid geometry, and how is it used to create complex 3D shapes?	(5)
4	Explain variational modelling process in CAD.	(5)
5	Name any five mating conditions used in assembly process.	(5)

PART B
Answer any 5 questions. Each question carries 7 marks

6	Explain the general layout of a typical CAD workstation with a neat, labelled diagram.	(7)
7	List out the steps in conventional design process and identify which of these steps can be computerised.	(7)
8	If a triangle has vertices at (2, 4), (5, 8), and (8, 4), and undergoes a reflection over the y-axis followed by a translation of 3 units in x axis and -2 units in y axis, what are the coordinates of the vertices of the new triangle?	(7)
9	Describe the process of primitive instancing used in solid modelling.	(7)
10	Explain Z-Buffer algorithm used for hidden surface removal.	(7)
11	What is the importance of design data exchange in CAD? Explain any two design data exchange standards used in CAD.	(7)
12	Explain bottom-up assembly process with an example.	(7)

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