KUMARAGURU college of technology
character is life

Register Number:……

M.E DEGREE EXAMINATIONS: MAY 2016

(Regulation 2015)

Second Semester

CAD/CAM

P15CCT203: Computer Applications in Design

COURSE OUTCOMES

CO1: Explain the fundamentals of computer graphics

CO2: Apply different techniques for geometric modeling

CO3: Apply different algorithm to create prismatic and lofted parts

CO4: Discuss tolerance analysis and mass property calculations

CO5: Explain data exchange standards and communication standards

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

Answer all the Questions:-

PART A (10 x 1 = 10 Marks)

1. Assertion (A): The light reflected from real object contains both diffuse and secular component, and both must be modeled to create realistic images. CO3 [K_1]

   Reason (R): A basic shading model that incorporates both a point light source and ambient light can be described.

   a) Both A and R individually true and R is the correct example of A
   b) Both A and R individually true and R is not the correct example of A
   c) A is true but R is false
   d) A is false but R is true

2. Basic building blocks for pictures are CO1 [K_1]

   a) Output primitives
   b) Resolution
   c) Attributes
   d) Algorithm

3. The Cartsion slope intercept equation for a straight line is CO1 [K_1]

   a) Y=M. x + b
   b) Y = b. x + m
   c) Y = x. x +m
   d) Y = b + m.m

4. Match the following CO4 [K_1]

List I	List II
A. Form	i. Position
B. Profile	ii. Angularity
C. Orientation	iii. Profile of a Line

D. Location				iv. Straightness
	A	B	C	D
a)	i	ii	iii	iv
b)	iv	iii	ii	i
c)	ii	iii	iv	i
d)	iii	iv	i	ii

5. Assertion (A): chromatic colors produce more pleasing effects on the human vision system than achromatic colors. CO3 [K_1]

Reason (R): The Munsell method is widely used and is based on visually comparing unknown colors against a set of standard colors.

a) Both A and R individually true and R is the correct example of A
b) Both A and R individually true and R is not the correct example of A
c) A is true but R is false
d) A is false but R is true

6. Surface models have considerable advantages over CO2 [K_1]

a) Wire frame model
b) Solid model
c) Sectional model
d) Ruled model

7. 1.The B-rep is very popular in computer graphics CO2 [K_1]

2.Very appropriate to construct solid model of unusual shapes

3. Manual methods for tolerance analysis are time consuming

4. All manufacturing parts are interchangeable

Which of these statements are correct?

a) 1, and 2
b) 2 and 3
c) 3 and 4
d) 4 and 1

8. Assertion (A): The Global section includes information describing the preprocessor and information needed by postprocessor to interpret the file. CO5 [K_1]

Reason (R): number of significant digits in the presentation of integer and single and double precision floating- point numbers on the sending system

a) Both A and R individually true and R is the correct example of A
b) Both A and R individually true and R is not the correct example of A
c) A is true but R is false
d) A is false but R is true

9. Mass property calculation usually involves evaluating CO4 [K_1]

a) Tolerance
b) Assembly
c) Standards
d) Integrals

10. The IGES file general structure has the following sequence of operations: CO5 [K_1]

I. Flag section
II. Start section
III. Global section
IV Directory entry section

a) I,II,III&IV
b) I, III II&IV
c) II, I,III&IV
d) III, I,II &IV

PART B (10 x 2 = 20 Marks)

11.	Interpret resolution.	CO1	$[K_2]$
12.	Identify the output primitives in computer graphics.	CO1	$[K_1]$
13.	List the types of clipping.	CO2	$[K_1]$
14.	Define coons batch.	CO2	$[K_1]$
15.	What is hidden line removal algorithm?	CO3	$[K_1]$
16.	Differentiate shading and coloring.	CO3	$[K_2]$
17.	Give in own about assembly of parts.	CO4	$[K_2]$
18.	Identify the applicable condition for Monte Carlo method.	CO4	$[K_1]$
19.	Define Bitmaps.	CO5	$[K_1]$
20.	State about GKS.	CO5	$[K_2]$

PART C (10 x 5 = 50 Marks)

21.	Illustrate the Bresenham's line algorithm.	CO1	$[K_3]$
22.	Explain translation, rotation and scaling.	CO1	$[K_2]$
23.	Describe the topology and geometry of boundary models.	CO2	$[K_2]$
24.	Discuss in detail about CSG modeling techniques.	CO2	$[K_2]$
25.	Illustrate the creation of prismatic and lofted parts.	CO3	$[K_3]$
26.	Explain different types of color models.	CO3	$[K_2]$
27.	Discuss in detail about mechanism simulation.	CO4	$[K_2]$
28.	Describe on mass property calculation.	CO4	$[K_2]$
29.	Explain about IGES.	CO5	$[K_2]$
30.	Discuss in detail on WAN and STEP.	CO5	$[K_2]$

Answer any TWO Questions

PART D (2 x 10 = 20 Marks)

31.	Draw the line with the end points (20,10) and (30,18), this line has the slope of 0.8.	CO1	[K_4]
32.	Develop solid removal algorithm with suitable example.	CO3	[K_3]
33.	Evaluate the Worst Case Arithmetic tolerance analysis.	CO4	[K_3]

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