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BW-1674-1675 Seat No._____

B. C. A. (Sem. - IV) Examination

April / May – 2014

(1) BCA - 404 : Computer Graphics

(Elective - I)

(2) BCA - 404 : Operating System

(Elective - II) (New Course)

Time : **3** Hours] [Total Marks : **70**

(1) BCA - 404 : Computer Graphics

(Elective - I)

1 (a) Do as directed : **6**

(i) What is Computer graphics ?

(ii) Define term Resolution.

(iii) What is Raster scan display ?

(iv) List out Input devices.

(v) Define Bitmap in graphics.

(vi) Define term Persistence.

(b) Attempt the following : (any three) **12**

(i) Explain CRT (Cathode Ray Tube)

(ii) Explain Random-scan display in detail.

(iii) Explain Application of Computer graphics.

(iv) Explain Output devices in detail.

2 (a) Do as directed : **5**

(i) Define term line in computer graphics.

(ii) Define Character attribute.

(iii) What is Antialising ?

(iv) What is Grayscale ?

(v) Define Cell array in computer graphics.

(b) Attempt the following : (any three) **12**

(i) Explain Boundary file algorithm.

(ii) Explain Bhesnham's algorithm.

(iii) Write scan line polygon fill algorithm.

(iv) Explain flood fill algorithm.

3 (a) Do as directed : **6**

(i) Define term translation.

(ii) What is Scaling ?

(iii) Define term Shear.

(iv) What is Reflection ?

(v) Define Term Rotation.

(vi) Transformation in which object is moved in a minimum distance path from one position to another is called_____.

(b) Attempt the following : (any three) **12**

(i) Write short note on translation transformation.

(ii) Explain composite transformation.

(iii) Explain Matrix representation and homogeneous coordinates in detail.

(iv) Explain scaling transformation.

4 (a) Do as directed : **5**

(i) What is text clipping ?

(ii) Define term viewing pipeline.

(iii) Define term window.

(iv) What is viewport ?

(v) What is point clipping ?

(b) Attempt the following : (any three) **12**

(i) Explain line clipping algorithm.

(ii) Explain Sutherland-Hoagemon polygon clipping algorithm.

(iii) Explain curve clipping in detail.

(iv) Explain viewing coordinate reference frame in detail.

(2) BCA - 404 : Operating System

(Elective - II) (New Course)

1 (a) Attempt the followings : **6**

(i) What is system call ?

(ii) Define : Buffering.

(iii) What is multithreading ?

(iv) What is difference between CUI and GUI ?

(v) Define : Batch Processing

(vi) Define : Operating System.

(b) Answer the following questions : (any three) **12**

(i) Which are the types of OS ? Explain distributed OS in detail.

(ii) What is kernal ? Explain types of kernal.

(iii) Explain the functions of OS in detail.

(iv) Explain layered system approach of OS in detail.

2 (a) Attempt the followings : **5**

(i) What is the task of dispacher ?

(ii) Define : Waiting time.

(iii) Define : Starvation.

(iv) _____ algorithm is suitable for time-sharing OS.

(v) Define : race condition.

(b) Answer the following questions : (any three) **12**

(i) What is process ? Explain state transition diagram of a process.

(ii) What is schedular ? Explain types of schedulars in detail.

(iii) Explain Round Robin algorithm with proper example.

(iv) Consider the following set of processes with the length of CPU burst time given in milliseconds.

Process	Arrival Time	Burst Time
P_1	0	7
P_2	2	4
P_3	4	1
P_4	5	4

Calculate Average Turn around time and Average Waiting time using preemptive SJF algorithm.

3 (a) Attempt the followings : **6**

(i) What is the difference between thread and process ?

(ii) What is critical section problem ?

(iii) What is deadlock recovery ?

(iv) Define : busy waiting

(v) Deine : deadlock

(vi) List the necessary conditions to occur deadlock.

(b) Answer the following questions : (any two) **12**

(i) What is semaphore ? Explain types of semaphore in detail.

(ii) Explain deadlock detection in detail.

(iii) Explain thread synchronization in detail.

4 (a) Attempt the following : **5**

(i) Write full form of ATU.

(ii) What is swapping ?

(iii) Define : Deman Pogging

(iv) Define : Page fault

(v) What is disk defragmentation ?

(b) Answer the following questions : (any two) **12**

(i) Explain Paging in detail.

(ii) What is fragmentation ? Explain with its types.

(iii) Explain segmentation in detail.