

Part A - Structured Essay

Answer all the four questions on this paper itself

- 1.
- a) Memory management is a key function of an operating system. Why does Memory management require compaction?
.....
.....
.....
- b) A computer system may refer to memory in bytes with a maximum memory capacity of 4 GB. What is the number of bits used to display the address?
.....
.....
.....
.....
.....
.....
- c) A processor design of virtual memory has been designed for a memory source of 1010111000101010. How many bits are used for page address, if it uses 12 bits for displacement (offset)?
.....
.....
.....
.....
- d) There are three types of process schedulers. Write down the scheduler types that will be used at given states.

Scheduler types	State
Job Scheduler	
CPU Scheduler	
Process swapping scheduler	

2.

a) Write 02 challenges related to big data.

.....
.....
.....
.....

b) Write 02 benefits of Parallel Computing.

.....
.....
.....
.....

c) Write 02 differences between Static RAM and Dynamic RAM

.....
.....
.....
.....

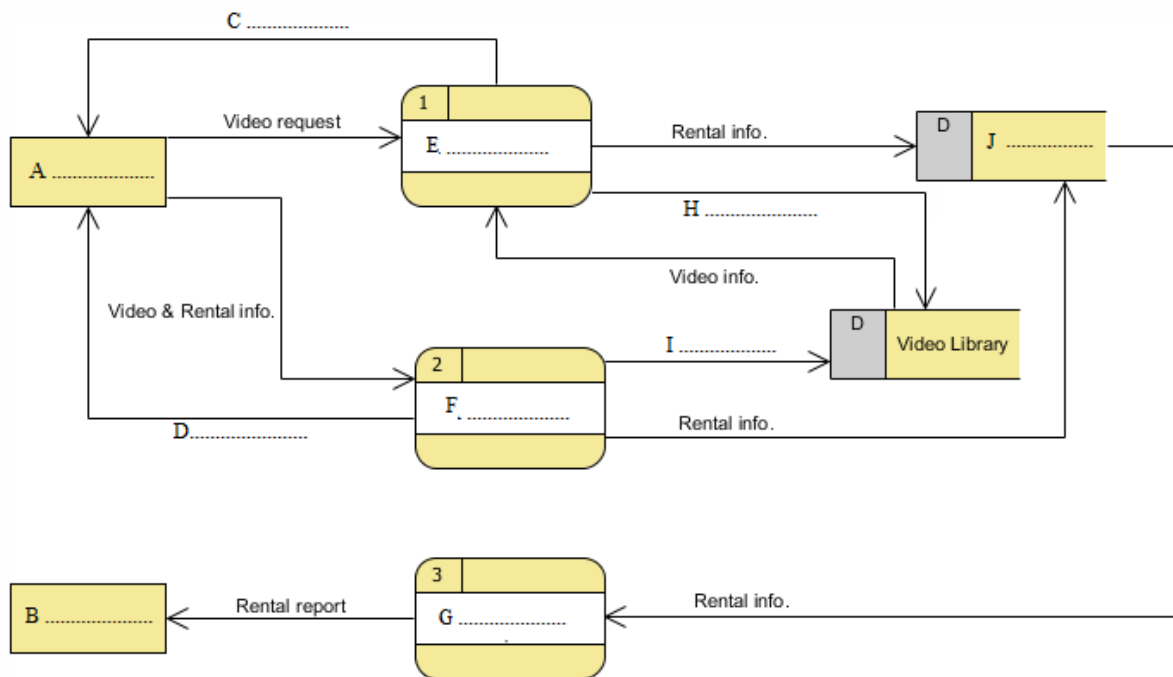
d) Define the term Cloud Computing and Give 02 cloud computing reference models with examples.

.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....

3. Fill in the blanks of the Data Flow Diagram of the video rental system of VCC video rental shop.

A **customer** can request for videos from the video rental shop. The person who is responsible for video rental, **rents the videos** and check for the availability status of the video on the video library file and if the video is available it is issued with a **bill**. The information of the rented video are kept in a **video rental file** and updates the **availability status** of the video in video library file.

Once a customer **returns a video**, a **return receipt** is issued and updates both the video library file and the video rental file with the **return video details**. A rental report consisting daily rental information should be sent to the **manager** to **check daily rentals** of the of the VCC Video Rental Shop.



- i)
- A
- B.....
- C
- D.....
- E
- F.....
- G
- H.....
- I
- J.....

ii) Write two guidelines that you have to follow when drawing Data Flow Diagrams. (Use diagrams if necessary).

.....