

Roll No.

Total No. of Questions : 9]
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UG (CBCS) IIIrd Year Annual Examination

3340

B.A. COMPUTER APPLICATION

(Operating System)

(DSE-1A)

(Common with B.Sc. Physical Science)

(DSE-2A)

Paper : COMP 301 TH

Time : 3 Hours]

[Maximum Marks : 70

Note :- Part-A is compulsory. Attempt *one* question each from Parts-B, C, D and E.

Part-A

(Compulsory Question)

1. Fill in the blanks/True/False/MCQ :

- (i) In system, jobs of similar requirements are grouped together and then executed without any user interaction.

CA-540

(1)

Turn Over

- (ii) The hardware unit in a system which translates the logical address into physical address at runtime is called as
- (iii) Multiprogramming Operating System improves efficiency and throughput of a system.
(True/False)
- (iv) The scheduler is the part of an Operating System that determines the priority of each process.
(True/False)
- (v) Paging allows the physical address space of a process to be non-contiguous. (True/False)
- (vi) The name of the script is stored in which special parameter ?
(a) \$1 (b) \$0
(c) \$# (d) \$*
- (vii) The operating system that allows frequent switching from one task to another task is :
(a) Single User (b) Batch Processing
(c) Real Time (d) Time Sharing
- (viii) Memory management technique in which system stores and retrieves data from the secondary storage for the main memory is called as :
(a) Allocation (b) Paging
(c) Mapping (d) Fragmentation

- (ix) An instruction is fetched by the CPU from the main memory according to the value of :
- (a) Program Counter
 - (b) Status Register
 - (c) Instruction Register
 - (d) Program Status Word
- (x) In priority scheduling algorithm, when a process arrives at the ready queue, its priority is compared with the priority of :
- (a) All processes
 - (b) Currently running process
 - (c) Parent process
 - (d) Blocked state processes
- 1×10=10

Part-B

2. (a) What is the difference between system software and application software ? Give few examples of both system software and application software.
- (b) Discuss different kinds of OS strategies. $7\frac{1}{2} \times 2 = 15$
3. Explain the various types of operating system along with advantages and disadvantages of each in detail. 15

Part-C

4. Define operating system. Discuss the various factors involved in operating system design. 15
5. (a) What is the difference between pre-emptive and non-pre-emptive CPU scheduling algorithms ?
- (b) Explain Shortest Job First and Priority Scheduling Algorithm. $7\frac{1}{2} \times 2 = 15$

Part-D

6. (a) What is Virtual Memory ? How does operating system implement virtual memory ?
- (b) Describe the various memory allocation techniques in detail. $7\frac{1}{2} \times 2 = 15$
7. Write short notes on the following :
- (a) Internal Fragmentation vs External Fragmentation
- (b) First Fit, Best Fit and Worst Fit
- (c) Demand Paging
- (d) Page Table
- (e) Page Fault $3 \times 5 = 15$

Part-E

8. Explain shell in detail. What are the different types of Shells available ? 15
9. (a) What are the various editors present in Linux ?
- (b) Discuss the role of system call. What are various system calls available in an operating system ? $7\frac{1}{2} \times 2 = 15$