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SEAT No. :

PA-1031

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T.Y. B.Sc. (Semester - VI)

COMPUTER SCIENCE

CS-361 : Operating System - II

(2019 Pattern) (CBCS)

*Time : 2 Hours]*

*[Max. Marks : 35*

*Instructions to the candidates:*

- 1) *All questions are compulsory.*
- 2) *Figures to the right indicate full marks.*

**Q1) Attempt any eight of the following :**

**[8 × 1 = 8]**

- a) What is request edge?
- b) What is safe state?
- c) Write the names of any two disk allocation methods of disk space.
- d) List disk performance parameters.
- e) Define distributed system.
- f) What is size scalability?
- g) List the different architectural styles of distributed operating systems.
- h) What is kernel?
- i) What is RISC in ARM architecture?
- j) Write any two special service requirements of mobile operating system.

**P.T.O.**

**Q2) Attempt any four of the following :**

**[4 × 2 = 8]**

- Write the difference between SCAN & LOOK disk scheduling algorithms.
- Define seek time & rotational latency.
- Explain features of mobile operating system.
- Give a comparative study of any four points of Android mobile operating system and Apple iOS mobile operating system.
- Write a short note on centralized organization of system architecture.

**Q3) Attempt any two of the following :**

**[2 × 4 = 8]**

- Explain any two deadlock prevention strategies.
- Explain sequential access & Direct access methods for a file.
- Write a short note on cloud computing system.

**Q4) Attempt any two of the following :**

**[2 × 4 = 8]**

- Consider following snapshot of the system. A, B, C, D are the resource types. Answer the following questions using Banker's algorithm.
  - What are the contents of Need matrix/array?
  - If the system is in the safe state, give the safe sequence.

	Allocation				Max				Total			
	A	B	C	D	A	B	C	D	A	B	C	D
P <sub>0</sub>	0	0	1	2	0	0	1	2	1	5	2	0
P <sub>1</sub>	1	0	0	0	1	7	5	0				
P <sub>2</sub>	1	3	5	4	2	3	5	6				
P <sub>3</sub>	0	6	3	2	0	6	5	2				
P <sub>4</sub>	0	0	1	4	0	6	5	6				

- b) Explain any four file operations.
- c) Explain the design goals of distributed systems.

**Q5) Attempt any one of the following :**

**[1 × 3 = 3]**

- a) What is total head movement for First-Come First-Served (FCFS) scheduling for the disk queue with requests for I/O to blocks on cylinders 98, 183, 37, 122, 14, 124, 65, 67 in that order, If the disk head is initially at cylinder 53.
- b) Explain the special constraints & requirements of mobile operating system.

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