Duration: 3hrs **[Max Marks:80]**

N.B. : (1) Question No 1 is Compulsory.
(2) Attempt any three questions out of the remaining five.
(3) All questions carry equal marks.
(4) Assume suitable data, if required and state it clearly.

Q. 1		Attempt any **FOUR**	**[20]**
	a	Explain Goals and objectives of OS	**[5]**
	b	Differentiate between Preemptive and Non-preemptive scheduling algorithms	**[5]**
	c	Explain Resource Allocation Graph with an example	**[5]**
	d	Write in detail about Memory Management Requirements	**[5]**
	e	Discuss File access methods	**[5]**
Q. 2	**a**	Discuss Producer and Consumer problem with solution using Semaphore	**[10]**
	b	Explain different structures of Operating System	**[10]**
Q. 3	**a**	What is the role of PCB? Explain the structure of PCB with its disadvantages.	**[10]**
	b	Explain Deadlock Avoidance algorithms with example.	**[10]**
Q. 4	**a**	Explain Page Replacement Strategies with suitable examples	**[10]**
	b	Discuss in detail about Disk Scheduling Algorithms with an examples	**[10]**
Q. 5	**a**	Explain Memory Allocation Strategies with suitable examples	**[10]**
	b	Explain Five state Process model with two suspended states	**[10]**
Q. 6		Write short notes on Following	**[20]**
	a	Concept of Multithreading	**[5]**
	b	Principles of Concurrency	**[5]**
	c	TLB	**[5]**
	d	File Directories	**[5]**

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