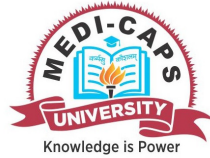


Enrollment No.....



Faculty of Engineering
End Sem (Even) Examination May-2018
CS2CO06 Operating System
 Programme: Diploma Branch/Specialisation: CSE

Duration: 3 Hrs.**Maximum Marks: 60**

Note: All questions are compulsory. Internal choices, if any, are indicated. Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d.

- Q.1 i. With use of multiprogramming , work can be **1**
 (a) Efficient (b) Rigid (c) Expensive (d) Flexible
- ii. Time Sharing technique handles **1**
 (a) Single interactive job (b) Multiple interactive job
 (c) Recent interactive job (d) Old interactive job
- iii. The system which allows only one process execution at a time is called **1**
 (a) Uniprogramming System (b) Uniprocessing System
 (c) Unitasking System (d) None of these
- iv. A set of process is deadlock if **1**
 (a) Each process is blocked and will remain so forever
 (b) Each process is terminated
 (c) All processes are trying to kill each other
 (d) None of these
- v. Which of the following is not a state of a process **1**
 (a) New (b) Old (c) Waiting (d) Running
- vi. A heavy weight process has which type of threads of execution **1**
 (a) Multiple (b) Single
 (c) Both single and multiple (d) None of these
- vii. Which module gives control of the CPU to the process selected by short term scheduler **1**
 (a) Dispatcher (b) Interrupt (c) Scheduler (d) None of these
- viii. Round Robin Scheduling falls under which type of scheduling category **1**
 (a) Preemptive (b) Non-Preemptive
 (c) Both (a) and (b) (d) None of these

- ix. File type can be represented by **1**
 (a) File name (b) File extension
 (c) File identifier (d) File number
- x. The address of a page table in memory is pointed by **1**
 (a) Stack pointer (b) Page table base register
 (c) Page register (d) Program Counter

- Q.2 i. What is an operating system? **2**
 ii. Differentiate between multitasking and time sharing operating system. **3**
 iii. Explain the evolution of operating system. **5**
- OR iv. Describe the different types of operating system. **5**
- Q.3 i. What do you mean by a system call? **2**
 ii. Define the role of operating system in device and file management. **8**
- OR iii. Describe the process of booting? Also explain monolithic and microkernel. **8**
- Q.4 i. What is the difference between process and program? **3**
 ii. What is process control block? Also describe different schedulers. **7**
- OR iii. What is Thread? Also define the types of Thread. **7**
- Q.5 i. What is a Deadlock? Write its necessary conditions? **4**
 ii. Consider the following set of processes arriving at time zero in CPU names of Processes are P1, P2, P3, P4, P5 whose Burst time are respectively 8, 6, 1, 9, 3 and Priorities are 4, 1, 2, 2, 3 (Consider 4 as the highest priority). Calculate the average waiting time and average turnaround time using Priority scheduling? **6**
- OR iii. Describe deadlock avoidance and prevention techniques. **6**
- Q.6 Attempt any two:
 i. Explain the optimal page replacement algorithm with example. **5**
 ii. What is dynamic memory allocation? **5**
 iii. Explain the concept of virtual memory. **5**

P.T.O.

Marking Scheme CS2CO06 Operating System

Q.1	i.	(a) Efficient		1
	ii.	(b) Multiple interactive job		1
	iii.	(b) Uniprocessing System		1
	iv.	(a) Each process is blocked and will remain so forever		1
	v.	(b) Old		1
	vi.	(b) Single		1
	vii.	(a) Dispatcher		1
	viii.	(a) Preemptive		1
	ix.	(b) File extension		1
	x.	(b) Page table base register		1

Q.2	i.	Definition	1 mark	2
		Diagram	1 mark	
	ii.	Minimum 4 points		3
OR	iii.	At least 5 generations.		5
	iv.	At least 4 types Diagram	4 marks 1 mark	5

Q.3	i.	Definition	1 mark	2
		Diagram	1 mark	
OR	ii.	Device and file management- (8 points each)		8
	iii.	Bootling Definition	1 mark	8
		Description (atleast 8 points) Diagram	6 marks 1 mark	

Q.4	i.	At least three differences		3
	ii.	Description of process control block Schedulers	3.5 marks 3.5 marks	7
OR	iii.	Threads Types of Threads	3.5 marks 3.5 marks	7

Q.5	i.	Deadlock	1 mark	4
		Diagram	1 mark	
		Necessary conditions	2 marks	

	ii.	Prirority Schdeuling - Avg Waiting Time – 10.4 ms Avg Turn Around Time – 15.8 ms		6
OR	iii.	Deadlock avoidance Deadlock prevention	3 marks 3 marks	6
Q.6		Attempt any two:		
	i.	Description of Algo Example	3 marks 2 marks	5
	ii.	Dynamic memory allocation Types	2 marks 3 marks	5
	iii.	Virtual memory (at least 7 points)		5
