



EXAMINATION PAPER

FACULTY : **COMPUTER SCIENCE AND MULTIMEDIA**
COURSE : **BACHELOR OF INFORMATION TECHNOLOGY (Hons)**
YEAR/ SEMESTER : **SECOND YEAR / SEMESTER THREE**
MODULE TITLE : **OPERATING SYSTEM**
CODE : **BIT 235**
DATE : **29 – APRIL, 2019, MONDAY**
TIME ALLOWED : **3 HOURS**
START : **1:00 PM** **FINISH** : **4:00 PM**

Instruction to candidates

1. This question paper has THREE (3) Sections.
2. Answer **ALL** questions in Section A, MCQ.
3. Answer **5** questions in Section B, MSAQ.
4. Answer **2** questions in Section C, MEQ.
5. No scripts or answer sheets are to be taken out of the Examination Hall.
6. For Section A, answer in the OMR form provided.

Do not open this question paper until instructed

(Candidates are required to give their answers in their own words as far as practicable)

SECTION A

Multiple Choice Questions

(30*1=30)

- 1. One word Memory Storage is the collection of:**
 - a. 2 Bytes
 - b. 4 Bytes
 - c. 7 Bytes
 - d. 8 Bytes
- 2. Second Generation of Computer Uses:**
 - a. Transistor
 - b. Integrated Chips
 - c. Vacuum Tubes
 - d. Microprocessor
- 3. Each User of the Computer System that uses Computer Services has at least:**
 - a. 1 Program
 - b. 2 Program
 - c. 3 Program
 - d. 4 Program
- 4. The User view of the system depends upon the:**
 - a. CPU
 - b. Software
 - c. Hardware
 - d. Interface
- 5. Memories are normally classified according to their:**
 - a. Speed
 - b. Cost
 - c. Indexes
 - d. Both 'a' and 'b'
- 6. Kernel Mode of Operating System runs when the mode bit is:**
 - a. 1
 - b. 0
 - c. X
 - d. Undefined
- 7. Third Generation of Computer Uses:**
 - a. Transistor
 - b. Integrated Chips
 - c. Vacuum Tubes
 - d. Microprocessor

8. AI refers to :

- a. Augmented Reality
- b. Virtual Reality
- c. Artificial Intelligence
- d. Artifact Intelligence

9. The _____ lets you move between applications without having to open and close them all the time.

- a. system tray
- b. taskbar
- c. desktop
- d. quick launch toolbar

10. IBM is an Example of :

- a. First Generation of Computers
- b. Second Generation of Computers
- c. Third Generation of Computers
- d. Fourth Generation of Computers

11. What is Operating System?

- a. Collection of Programs that manages hardware resources
- b. System service provider to the application programs
- c. Link to interface the hardware and application programs
- d. All of the above

12. Which one of the following errors will be handling by the operating system?

- a. Power failure
- b. Lack of paper in printer
- c. Connection failure in the network
- d. All of the above

13. Paging is implemented in:

- a. Operating System
- b. Hardware
- c. Software
- d. All of the above

14. Kernel Mode of the Operating System is also Called:

- a. User Mode
- b. System Mode
- c. Supervisor Mode
- d. Both 'a' and 'b'

15. Multi-Processor Systems of the computer system has advantage of:

- a. Cost
- b. Reliability
- c. Uncertainty
- d. Scalability

16. One Megabyte Memory Storage in the form of bytes is equal to:

- a. 1024 bytes
- b. 1024 Kilo bytes
- c. 1056 bytes
- d. 1058 Kilo bytes

17. One that is not a peripheral device of the computer system is:

- a. Keyboard
- b. Mouse
- c. Printer
- d. Register

18. Process Synchronization of programs is done by:

- a. Input
- b. Output
- c. Operating System
- d. Memory

19. Static Programs of the Computer System are Stored in:

- a. RAM
- b. ROM
- c. Hard Disk
- d. CD

20. Octa-Core Processor are the processors of the Computer System that contains:

- a. 2 Processors
- b. 4 Processors
- c. 6 Processors
- d. 8 Processors

21. Secondary Memory of the Computer System is able to store:

- a. Program
- b. Data
- c. Instructions
- d. Both 'a' and 'b'

22. Which of the Following Memory allocation scheme suffers from External Fragmentation?

- a. Segmentation
- b. Pure Demand Paging
- c. Swapping
- d. Paging

23. A thread is a light Weight Process. In the statement, weight refers to:

- a. Time
- b. Number of Resources
- c. Speed
- d. All of the above

24. First Generation of Computer Uses :

- a. Transistor
- b. Integrated Chips
- c. Vacuum Tubes
- d. Microprocessor

25. Possible thread states in Windows 2000 Operating System Includes:

- a. Ready, running and Waiting
- b. Ready, Running, Waiting and Terminated
- c. Ready, Running, Waiting, Transition and Terminated
- d. Standby, Running, Transition and Termination

26. Which do you think is the good solution of Memory Management Selection?

- a. First Fit Allocation
- b. Best Fit Allocation
- c. Fixed Partition
- d. Dynamic Partition

27. What is the condition that should met for 3 states Race Condition?

- a. Ready – Running – Terminate
- b. Ready – Terminate
- c. Ready – Running – Wait – Terminate
- d. Ready – Running – Terminate – Running

28. The Operating System is an Example of a Computer:

- a. Object
- b. File System
- c. Program
- d. Desktop

29. Most Often, you click with the _____ button when you want to select something.

- a. middle
- b. left
- c. right
- d. all of the above

30. Microprocessor is used in which generation of Computers:

- a. First Generation of Computers
- b. Second Generation of Computers
- c. Third Generation of Computers
- d. Fourth Generation of Computers

SECTION B

Short Answer Questions

Answer any five (5) questions out of eight (8) questions (5*6=30)

1. Briefly explain the activities of the operating system in regard to process management.
2. Summarize the CPU scheduling algorithm criteria.
3. Describe the 1st generation of computing.
4. Give some benefits of multithreaded programming and multi processing.
5. Write the meaning of File Operation. Discuss the most common system calls relating to files. (1+5)
6. Define Ostrich Algorithm. What factors determine whether a detection-algorithm must be utilized in a deadlock avoidance system?(2+4)
7. Explain the Virtual Machine and Client Server Model.
8. Define the following terms: **(any three)** (3*2)
 - a. Kernel
 - b. Symmetric Multi-Processing
 - c. Caching
 - d. Demand paging

SECTION C

Long Answer Questions

Attempt any two (2) questions out of three (3) questions (2*20=40)

1. Describe the use, adaptation and implementation of Operating System in human daily operation with modern features of Operating System. Also give your reason why we should switch to open source instead of Proprietary Operating System.(14+6)
2.
 - A. Define Memory Management. Give a clear view on the use and adaptation of Memory Management. (1 + 5)
 - B.
 - i. Explain Static and Dynamic Solution. (6)
 - ii. Explain First Fit Allocation and Best Fit Allocation. (6)
 - iii. Explain Page Fault Handling in brief. (2)
3. A. Define deadlock. How to avoid deadlocks? Write the methods of handling deadlock states.(2+4+5)
B. Using Banker's algorithm, answer the following questions: (3*3)
 - i. How many resources of type A, B, C, D are there?
 - ii. What are the contents of need matrix?
 - iii. Find if the system is in safe state? If it is, find the safe sequence.

Process	Allocation	Max	Available
	A B C	A B C	A B C
P0	0 1 0	7 5 3	3 3 2
P1	2 0 0	3 2 2	
P2	3 0 2	9 0 2	
P3	2 1 1	2 2 2	
P4	0 0 2	4 3 3	

BEST OF LUCK