

[Time:2.30 Hrs]

[Marks:75]

Please check whether you have got the right question paper.

N.B: (1) All questions are compulsory.

(2) Figures to the right indicate full marks.

(3) Assume additional data if necessary but state the same clearly.

(4) Symbols have their usual meanings and tables have their usual standard design unless stated otherwise.

(5) Use of calculators and statistical tables are allowed. / If required, keep it.

- Q.1 Attempt any three of the following 15
- What is GRUB in Linux? Write a note on GRUB Features and GRUB Interfaces
 - What is Independent process and Co-operating process? With the help of diagram explain Messaging Passing Method
 - Discuss how the following pairs of scheduling criteria conflict in certain setting.
 - CPU utilization and response time
 - Average turnaround time and maximum waiting time
 - What is the difference between kernel mode and user mode?
 - What is the process type in Linux? Describe the real-time scheduling policies?
 - Describe the Microkernel and Monolithic Kernel?
- Q.2 Attempt any three of the following 15
- Following are the Techniques used for structuring the Page Table,
 - Hierarchical Paging
 - Hashed Page Tables
 - Inverted Page TablesExplain any two in details?
 - Explain Least Recently Used page replacement algorithm?
 - What is SEGMENTATION? With the help of diagram explain Segment Table?
 - With the help of diagram explain memory management with bitmaps and memory management with linked lists?
 - Discuss the various design issues for paging system?
 - What are the Local and Global Allocation Policies?
- Q.3 Attempt any three of the following 15
- With the diagram explain Direct Memory Access (DMA)?
 - What is Polling I/O and Interrupts I/O?
 - What are program Threats and system Threats?
 - Following is the File Access Mechanisms,
 - Sequential access
 - Direct/Random access
 - Indexed sequential accessExplain any two in detail?
 - What is Block Devices and Character Devices?

- f. Explain the following terms,
- Mutual Exclusion
 - Hold and Wait
 - Circular Wait

Q.4 Attempt **any three** of the following 15

- Explain Android Activity Lifecycle?
- Write a short note on Location Manager?
- Write a short note on SQLite?
- Write a short note Android libraries?
- Explain the LINUX KERNEL?
- Write about Dalvik Virtual Machine?

Q.5 Attempt **any three** of the following 15

- With the help of diagram explain Translation look aside buffer (TLB)?
- Using the FIFO (First in, First Out) page replacement policy calculate the hit and miss ratios of following page reference string
4, 7, 6, 1, 7, 6, 1, 2, 7, 2
- What is deadlock? Explain Deadlock Detection and Deadlock Prevention?
- With the help of diagram explain Android Software Stack?
- Discuss the concept of virtual memory?
- With the help of diagram explain Segmentation Hardward?
