1 (Sem–4/FYUGP) COM 42 MN/(A)

2026

COMPUTER SCIENCE

(Minor)

SET–A

Paper : COM4400604MN

(Operating System)

Full Marks : 45

Time : 2 hours

The figures in the margin indicate full marks for the questions.

SET–A

1. Answer the following questions :
(Each question carries **1** mark) 1×5=5

   (i) Define Operating System.

   (ii) What is CPU scheduling ?

   (iii) What do you mean by semaphore ?

   (iv) What is a system call ?

   (v) What is a process ?

2. Answer ***any five*** of the following questions :
(Each question carries **2** marks) 2×5=10

   (i) Differentiate Batch OS and Time-sharing OS.

   (ii) Define demand paging.

   (iii) What is open source operating system ?

   (iv) What is deadlock ?

   (v) Define logical and physical address.

   (vi) What is semaphore ?

   (vii) What is degree of multiprogramming ?

   (viii) Define process.

   (ix) Define thread.

   (x) What is virtual memory ?

3. Answer ***any four*** of the following questions :
(Each question carries **5** marks) 5×4=20

   (i) What are the major functions of operating system ?

   (ii) Define user thread and kernel thread.

   (iii) State memory management techniques in detail.

   (iv) Describe TLB.

   (v) Explain Banker's Algorithm with example.

   (vi) Describe PCB and its structure.

   (vii) Explain the function performed by the linux commands : pwd, mkdir, echo, sudo, chmod.

   (viii) Compare file allocation methods. Write detailed notes on storage management.

4. Answer ***any one*** of the following questions :
(Each question carries **10** marks) 10

   (i) Discuss major types of operating system.

   (ii) What is paging and segmentation ? Compare paging and segmentation with diagrams.

(iii) Explain the necessary conditions for deadlock.

(iv) Discuss *any one* page replacement algorithm used for memory management.
