Student's Copy

Professional Course (Odd) Examination, 2024

(CBCS)

(3rd Semester)

BACHELOR OF COMPUTER APPLICATIONS

(**Operating Systems**)

Full Marks : 75

Time : 3 hours

The figures in the margin indicate full marks for the questions

(PART : A—OBJECTIVE)

(*Marks* : 25)

SECTION—I

(*Marks* : 15)

A. Tick (✓) the correct answer in the brackets provided :   1×10=10

1. BIOS is used by
   (a) operating system   (   )   *(b)* compiler   (   )
   (c) interpreter   (   )   *(d)* application software   (   )

2. Which of the following types of OS reads and reacts in terms of actual time?
   (a) Quick sharing OS   (   )   *(b)* Real-time OS   (   )
   (c) Time sharing OS   (   )   *(d)* Batch OS   (   )

3. FIFO scheduling is a type of

   (a) preemptive scheduling   (:)

   (b) non-preemptive scheduling   (   )

   (c) deadline scheduling   (   )

   (d) None of the above   (   )

4. OS classifies the threads as

   (a) security and memory level   (   )

   (b) OS and CPU level   (   )

   (c) kernel and user level   (   )

   (d) motherboard level   (   )

5. The priority of a process will _____ if the scheduler assigns it a static priority.

   (a) depends on the operating system   (   )

   (b) change   (   )

   (c) remain unchanged   (   )

   (d) None of the above   (   )

6. A problem encountered in multitasking when a process is perpetually denied necessary resources is called

   (a) deadlock   (   )   (b) starvation   (   )

   (c) inversion   (   )   (d) aging   (   )

7. For non-shareable resources like a printer, mutual exclusion

   (a) must exist   (   )   (b) must not exist   (   )

   (c) may exist   (   )   (d) None of these   (   )

8. With relocation and limit registers, each logical address must be _____ the limit register.

   (a) less than   (   )   (b) equal to   (   )

   (c) greater than   (   )   (d) None of these   (   )

9. Every address generated by the CPU is divided into two parts which are

   (a) frame bit and page number   ( )

   (b) page number and page offset   ( )

   (c) page offset and frame bit   ( )

   (d) frame offset and page offset   ( )

10. Which of the following are the two parts of the file name?

   (a) name and identifier   ( )

   (b) identifier and type   ( )

   (c) extension and name   ( )

   (d) type and extension   ( )

B. State whether the following statements are *True (T)* or *False (F)* by putting a Tick (✓) mark :   1×5=5

1. The operating system will always record the generated bugs or errors on a log file when an operating system finds any kinds of errors.

                 (T   /   F   )

2. The address of the next instruction to be executed by the current process is provided by piping.

                 (T   /   F   )

3. All unsafe states are not deadlocks.

                 (T   /   F   )

4. Swap space exists in secondary memory.

                 (T   /   F   )

5. The first fit and best fit algorithms suffer from starvation.

                 (T   /   F   )

SECTION—II

(Marks : 10)

C. Answer the following questions :   2×5=10

1. What are multiprocessor systems? Mention two advantages.
2. What is CPU scheduler?
3. What are safe state and safe sequence?
4. What is external fragmentation? How will you reduce it?
5. Define seek time and latency time.

(PART : B—DESCRIPTIVE)

(Marks : 50)

1. (a) Explain operating system functions and services in detail.   10

OR

(b) Discuss the different types of operating system in detail.

2. (a) Define process. Explain process states with a neat and labelled diagram.
                   1+5=6

(b) Write a short note on the properties and characteristics of semaphore.   4

OR

(c) Explain SRTN scheduling with an example diagram.   5

(d) Describe the different multithreading models.   5

3. (a) Define deadlock. What are the necessary conditions for deadlock to occur in the system?
                   5

(b) Explain the banker's algorithm with example.   5

OR

(c) Discuss the algorithm for deadlock detection and methods for deadlock recovery.
                   6

(d) Write a short note on deadlock prevention.   4

4. (a) Discuss LRU Approximation page Replacement. 5

(b) How does segmentation differ from paging? Explain the paged segmentation with an example. 5

OR

(c) Discuss FIFO page replacement algorithm. Using FIFO algorithm, determine the number of page fault occurrences for the following reference string with three page frames : 3+3=6

4, 3, 0, 3, 2, 1, 4, 9, 2, 0, 4

(d) Write a short note on swapping. 4

5. (a) Explain file concept, file attributes and file structure. 5

(b) Discuss contiguous and linked file allocation methods with suitable diagrams. 5

OR

(c) Describe how Access Control List can be useful for managing file access. 4

(d) Name four file operations. 2

(e) Explain single-level and two-level directory structure. 4

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Professional Course (Odd) Examination, 2024

(CBCS)

(1st Semester)

BACHELOR OF COMPUTER APPLICATIONS

(English Language and Communication Skills)

Full Marks : 75

Time : 3 hours

The figures in the margin indicate full marks for the questions

1. Choose the name of the Parts of Speech of the underlined words : 1×5=5

(a) The <u>up</u> train is early.

   (i) Adjective

   (ii) Verb

   (iii) Adverb

(b) <u>After</u> the storm comes the calm.

   (i) Conjunction

   (ii) Adverb

   (iii) Preposition

(c) He kept the <u>fast</u> for a month.

   (i) Adverb

   (ii) Verb

   (iii) Noun

1

(d) I will sleep <u>while</u> you study.

    (i) Conjunction

    (ii) Preposition

    (iii) Interjection

(e) They <u>while</u> away their precious time partying.

    (i) Preposition

    (ii) Verb

    (iii) Adverb

2. Answer the following as directed given in the brackets :   1×5=5

(a) I will have been speaking.

    (Change into Future Perfect Tense)

(b) I have loved.

    (Change into Present Continuous Tense)

(c) He drinks tea every morning.

    (Change into Past Perfect Continuous Tense)

(d) They had been listening.

    (Change into Past Perfect Tense)

(e) He will leave before you go to see him.

    (Change into Future Perfect Tense)

3. Answer the following according to the directions given in the brackets :   1×5=5

(a) A guilty conscience needs no excuse.

    (Identify the Subject and the Predicate)

(b) Up went the balloon.

    (Identify the Subject and the Predicate)

(c) No one knows who he is.

    (Underline the Noun Clause)

(d) There came a beggar to my door.

(State whether the underlined group of words is a Phrase or Clause)

(e) Mawia has a necklace that is made of gold.

(Underline the Clause)

4. Change the voice of the following : 1×5=5

(a) Some boys were helping the wounded man.

(Change into Passive Voice)

(b) The works will be finished by him in a fortnight.

(Change into Active Voice)

(c) Why did your brother write such a letter?

(Change into Passive Voice)

(d) He was refused admittance by the guard.

(Change into Active Voice)

(e) Who taught you English?

(Change into Passive Voice)

5. Change the speech of the following : 1×5=5

(a) The teacher said, "The earth goes round the sun."

(b) He asked me what I was doing.

(c) He said, "Will you listen to such a man?"

(d) He said, "Alas! I am undone."

(e) The Minister said that it gave him great pleasure to be there that evening.

6. Choose the correct form of the verbs to fill in the blanks : 1×5=5

(a) His knowledge of Indian vernacular _____ (is/are) far beyond the common.

(b) Fire and water _____ (do/does) not agree.

(c) The house, with its contents, ———— (was/were) insured.

(d) My friend and benefactor ———— (has/have) come to see me.

(e) Neither food nor water ———— (was/were) to be found there.

7. (a) Discuss the importance of English as a link language.   10

OR

(b) What is communication? Discuss the different components of communication.   5

8. Write a short note on any *one* of the following :

(a) Psychological barrier

(b) Interpersonal barrier

(c) Overcoming semantic barrier

9. (a) What is non-verbal communication? Discuss the different kinds of non-verbal communication.   10

OR

(b) What is verbal communication? Discuss the different vocal communication techniques.   5

10. Write a short note on any *one* of the following :

(a) Steps to improve listening skills

(b) Guideline for improving reading skills

11. Oral Communication (To be conducted in the college)   15

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[Contd.

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