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62-8-25 = 53.75
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ಈ ಪ್ರಶ್ನೆಪುಸ್ತಿಕೆಯನ್ನು ತೆರೆಯುವಂತೆ ನಿಮಗೆ ತಿಳಿಸುವವರೆಗೂ ಇದನ್ನು ತೆರೆಯಕೂಡದು

ಪ್ರಶ್ನೆಪುಸ್ತಿಕೆ
ನಿರ್ದಿಷ್ಟ ಪತ್ರಿಕೆ
ಪತ್ರಿಕೆ II
(279)



ಪ್ರಶ್ನೆಪತ್ರಿಕೆ ಶ್ರೇಣಿ



ಸಮಯ : 2 ಗಂಟೆಗಳು

ಗರಿಷ್ಠ ಅಂಕಗಳು : 200

ಸೂಚನೆಗಳು

1. ಪರೀಕ್ಷೆ ಪ್ರಾರಂಭವಾದ ಕೂಡಲೇ ನಿಮ್ಮ ಪ್ರಶ್ನೆಪತ್ರಿಕೆಯಲ್ಲಿ ಅಮುದ್ರಿತ ಅಥವಾ ಹರಿದಿರುವ ಅಥವಾ ಬಿಟ್ಟು ಹೋಗಿರುವ ಪುಟಗಳು ಅಥವಾ ಪ್ರಶ್ನೆಗಳು ಇತ್ಯಾದಿಗಳು ಕಂಡುಬಂದಲ್ಲಿ ನಿಮ್ಮ ಒ.ಎಂ.ಆರ್. ಉತ್ತರ ಹಾಳೆಯಲ್ಲಿ ಮುದ್ರಿತವಾಗಿರುವ ಅದೇ ಶ್ರೇಣಿಯ ಪೂರ್ಣ ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆ ಯೊಂದಿಗೆ ಬದಲಾಯಿಸಿ ಕೊಳ್ಳತಕ್ಕದ್ದು.
2. ಅಭ್ಯರ್ಥಿಯು ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆಯ ಶ್ರೇಣಿಯು, ತಮ್ಮ ಒ.ಎಂ.ಆರ್. ಉತ್ತರ ಹಾಳೆಯಲ್ಲಿ ಮುದ್ರಿತವಾಗಿರುವ ಅದೇ ಪ್ರಶ್ನೆಪತ್ರಿಕೆಯ ಶ್ರೇಣಿಯಾಗಿರುವುದೇ ಎಂಬುದನ್ನು ಖಚಿತಪಡಿಸಿಕೊಳ್ಳಬೇಕು. ವ್ಯತ್ಯಾಸಗಳು ಕಂಡುಬಂದಲ್ಲಿ, ಸಂವೀಕ್ಷಕರ ಗಮನಕ್ಕೆ ತರುವುದು ಮತ್ತು ಪ್ರಶ್ನೆಪತ್ರಿಕೆಯ ಶ್ರೇಣಿಯು ತಮಗೆ ಹೊಂದುವ (ಅದೇ) ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆಯಾದ ಮತ್ತು ಒ.ಎಂ.ಆರ್. ಉತ್ತರ ಹಾಳೆಯಲ್ಲಿ ಮುದ್ರಿತವಾಗಿರುವ ಶ್ರೇಣಿಯ ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆಯನ್ನೇ ಪಡೆಯತಕ್ಕದ್ದು.
3. ಪಕ್ಕದಲ್ಲಿ ಒದಗಿಸಿರುವ ಪ್ರಶ್ನೆಪತ್ರಿಕೆಯ ಚೌಕದಲ್ಲೇ ನಿಮ್ಮ ನೋಂದಣಿ ಸಂಖ್ಯೆಯನ್ನು ನಮೂದಿಸಬೇಕು. ಪ್ರಶ್ನೆ ಪುಸ್ತಿಕೆಯಲ್ಲಿ ಬೇರೆ ಏನನ್ನೂ ಬರೆಯಬಾರದು.

ನೋಂದಣಿ ಸಂಖ್ಯೆ					
4. ಈ ಪ್ರಶ್ನೆ ಪುಸ್ತಿಕೆ 100 ಪ್ರಶ್ನೆಗಳನ್ನು ಒಳಗೊಂಡಿರುತ್ತದೆ. ಪ್ರತಿಯೊಂದು ಪ್ರಶ್ನೆಯು 4 ಪ್ರತಿಕ್ರಿಯೆಗಳನ್ನು (ಉತ್ತರಗಳನ್ನು) ಒಳಗೊಂಡಿರುತ್ತದೆ. ನೀವು ಉತ್ತರ ಹಾಳೆಯಲ್ಲಿ ಗುರುತು ಮಾಡಬೇಕೆನಿಸುವ ಉತ್ತರವನ್ನು ಆಯ್ಕೆ ಮಾಡಿಕೊಳ್ಳಿ. ಒಂದು ವೇಳೆ ಅಲ್ಲಿ ಒಂದಕ್ಕಿಂತ ಹೆಚ್ಚು ಸರಿಯಾದ ಉತ್ತರಗಳಿವೆಯೆಂದು ನೀವು ಭಾವಿಸಿದರೆ ನಿಮಗೆ ಅತ್ಯುತ್ತಮವೆನಿಸುವ ಉತ್ತರಕ್ಕೆ ಗುರುತು ಮಾಡಿ. ಏನೇ ಆದರೂ ಪ್ರತಿ ಪ್ರಶ್ನೆಗೆ ನೀವು ಕೇವಲ ಒಂದು ಉತ್ತರವನ್ನು ಮಾತ್ರ ಆಯ್ಕೆ ಮಾಡಬೇಕು.
5. ಎಲ್ಲಾ ಉತ್ತರಗಳನ್ನು ನಿಮಗೆ ಒದಗಿಸಲಾಗಿರುವ ಪ್ರತ್ಯೇಕ ಒ.ಎಂ.ಆರ್. ಉತ್ತರ ಹಾಳೆಯ ಮೇಲೆ ಕೇವಲ ಕಪ್ಪು ಅಥವಾ ನೀಲಿ ಶಾಯಿಯ ಬಾಲ್ ಪಾಯಿಂಟ್ ಪೆನ್ನಿನಲ್ಲಿ ಮಾತ್ರ ಗುರುತು ಮಾಡಬೇಕು. ಒ.ಎಂ.ಆರ್. ಉತ್ತರ ಪತ್ರಿಕೆ ಹಾಳೆಯಲ್ಲಿನ ವಿವರವಾದ ಸೂಚನೆಗಳನ್ನು ಗಮನಿಸುವುದು.
6. ಎಲ್ಲಾ ಪ್ರಶ್ನೆಗಳಿಗೆ ಸಮಾನ ಅಂಕಗಳು. ಎಲ್ಲಾ ಪ್ರಶ್ನೆಗಳಿಗೆ ಉತ್ತರಿಸಿ.
7. ಚಿತ್ತು ಕೆಲಸಕ್ಕಾಗಿ ಹಾಳೆಗಳನ್ನು ಪ್ರಶ್ನೆ ಪುಸ್ತಿಕೆಯ ಕೊನೆಯಲ್ಲಿ ಸೇರಿಸಲಾಗಿದೆ. ಪ್ರಶ್ನೆ ಪುಸ್ತಿಕೆಯ ಇನ್ನುಳಿದ ಯಾವ ಭಾಗದಲ್ಲಿಯೂ ನೀವು ಯಾವ ರೀತಿಯ ಗುರುತನ್ನು ಮಾಡತಕ್ಕದ್ದಲ್ಲ.
8. ಪರೀಕ್ಷೆಯ ಮುಕ್ತಾಯವನ್ನು ಸೂಚಿಸುವ ಅಂತಿಮ ಗಂಟೆ ಬಾರಿಸಿದ ತಕ್ಷಣವೇ ಒ.ಎಂ.ಆರ್. ಉತ್ತರ ಪತ್ರಿಕೆ ಹಾಳೆಯಲ್ಲಿ ಇನ್ನಾವುದೇ ಗುರುತು ಮಾಡುವುದನ್ನು ನಿಲ್ಲಿಸಬೇಕು. ಸಂವೀಕ್ಷಕರು ಬಂದು ನಿಮ್ಮಲ್ಲಿರುವ ಒ.ಎಂ.ಆರ್. ಉತ್ತರ ಹಾಳೆಯನ್ನು ತಮ್ಮ ವಶಕ್ಕೆ ಪಡೆದುಕೊಂಡು ಲೆಕ್ಕಕ್ಕೆ ತೆಗೆದುಕೊಳ್ಳುವವರೆಗೂ ನಿಮ್ಮ ನಿಮ್ಮ ಆಸನದಲ್ಲಿಯೇ ಕುಳಿತಿಕೊಳ್ಳಿ.
9. ಪ್ರಶ್ನೆಗಳು ಕನ್ನಡ ಮತ್ತು ಅಂಗ್ಲ ಭಾಷೆಯಲ್ಲಿರುತ್ತವೆ. ಕನ್ನಡ ಪ್ರಶ್ನೆಗಳಲ್ಲಿ ಸಂದೇಹ ಉಂಟಾದರೆ, ದಯವಿಟ್ಟು ಅಂಗ್ಲ ಭಾಷೆಯ ಪ್ರಶ್ನೆಗಳನ್ನು ಗಮನಿಸುವುದು. ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆಯ ಪ್ರಶ್ನೆಗಳಲ್ಲಿ ಯಾವುದೇ ಗೊಂದಲಗಳಿದ್ದರೂ ಅಂಗ್ಲ ಭಾಷೆಯ ಪ್ರಶ್ನೆಗಳೇ ಅಂತಿಮವಾಗಿರುತ್ತವೆ.
10. ತಪ್ಪು ಉತ್ತರಗಳಿಗೆ ವಿಧಿಸಲಾಗುವ ದಂಡ :

ವಸ್ತುನಿಷ್ಠ ಬಹು ಆಯ್ಕೆ ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆಗಳಲ್ಲಿ ಅಭ್ಯರ್ಥಿಗಳು ಗುರುತು ಮಾಡಿದ ತಪ್ಪು ಉತ್ತರಕ್ಕೆ ದಂಡ ವಿಧಿಸಲಾಗುತ್ತದೆ.

 - (i) ಪ್ರತಿಯೊಂದು ಪ್ರಶ್ನೆಯ ಉತ್ತರಕ್ಕೆ ನಾಲ್ಕು ಪರ್ಯಾಯಗಳಿವೆ. ಅಭ್ಯರ್ಥಿಯು ತಪ್ಪು ಉತ್ತರ ನೀಡಿದ ಪ್ರತಿಯೊಂದು ಪ್ರಶ್ನೆಗೆ ಆ ಪ್ರಶ್ನೆಗೆ ನಿಗದಿಪಡಿಸಲಾದ ಅಂಕಗಳಲ್ಲಿ 1/4 ರಷ್ಟು ಅಂಕಗಳನ್ನು ದಂಡ ರೂಪದಲ್ಲಿ ಕಳೆಯಲಾಗುವುದು.
 - (ii) ಅಭ್ಯರ್ಥಿಯು ಒಂದು ಪ್ರಶ್ನೆಗೆ ಒಂದಕ್ಕಿಂತ ಹೆಚ್ಚು ಉತ್ತರವನ್ನು ನೀಡಿದರೆ, ಅಲ್ಲಿರುವ ಒಂದು ಉತ್ತರವು ಸರಿಯಿದ್ದರೂ ಸಹ ಅದನ್ನು ತಪ್ಪು ಉತ್ತರ ಎಂದು ಪರಿಗಣಿಸಲಾಗುವುದು ಮತ್ತು ಮೇಲೆ ತಿಳಿಸಿದಂತೆಯೇ ಆ ಪ್ರಶ್ನೆಗೆ ದಂಡ ವಿಧಿಸಲಾಗುವುದು.
 - (iii) ಅಭ್ಯರ್ಥಿಯು ಪ್ರಶ್ನೆಯನ್ನು ಖಾಲಿ ಬಿಟ್ಟಿದ್ದಾಗ ಅಂದರೆ ಉತ್ತರವನ್ನು ನೀಡದಿದ್ದಾಗ ಆ ಪ್ರಶ್ನೆಗೆ ಯಾವುದೇ ದಂಡ ವಿಧಿಸಲಾಗುವುದಿಲ್ಲ.

ಯಾವುದೇ ರೀತಿಯ ಮೊಬೈಲ್ ಫೋನ್ ಮತ್ತು ಇತರೆ ರೀತಿಯ ಎಲೆಕ್ಟ್ರಾನಿಕ್/ಕಮ್ಯೂನಿಕೇಷನ್ ಸಾಧನಗಳು ಇತ್ಯಾದಿಗಳನ್ನು ಪರಿಶುದ್ಧ ಕೇಂದ್ರದ ಆವರಣದೊಳಗೆ ತರುವುದನ್ನು ನಿಷೇಧಿಸಿದೆ.

Note : English version of the instructions is printed on the back cover of this booklet.

1. Which two data types among the following have the same type of syntax ?

- A. Array
- B. Pointer
- C. Union
- D. Structure

Select the code for the correct answer from the options given below :

- (1) A and B only
- (2) B and C only
- (3) C and D only ✓
- (4) A and D only

2. Pick out the one that is the correct approach to pass structure members to functions.

- (1) Passing members of a structure individually
- (2) Passing entire structure at once
- (3) Passing address of a structure variable
- (4) All of the above

3. Shifting an unsigned integer to the right by n bits using right shift operator >> has the effect of

- (1) Dividing the integer by 2 to the power n
- (2) Multiplying the integer by 2 to the power n
- (3) Adding a constant value to the integer
- (4) Adding the number to itself

4. CPU scheduling may take place under the circumstances when a process switches from

- A. running state to the waiting state ✓
- B. waiting state to the running state ✓
- C. running state to the ready state
- D. ready state to the running state ✓
- E. waiting state to the ready state (X)

Which of the above statements are correct ?

Select the code for the correct answer from the options given below :

- (1) A, B, C, D
- (2) A, C, E
- (3) B, C, D, E
- (4) A, C, D

5. Which one of the following statements is **not** correct for a pre-processor directive ?

- (1) It must begin with symbol #
- (2) Only one pre-processor directive can be in one line
- (3) It must be terminated with a semicolon ✓
- (4) It can appear anywhere in a program

6. Match the following :

- | | |
|------------------|---------------------------------|
| A. Job queue | I. Short-term scheduler |
| B. Dispatched | II. Waiting for input |
| C. Device queue | III. Long-term scheduler |
| D. CPU scheduler | IV. Main memory |
| E. Job scheduler | V. Selected for execution |
| F. Ready queue | VI. All processes in the system |

Select the code for the correct answer from the options given below :

- | | A | B | C | D | E | F |
|---|----|---|----|-----|-----|-----|
| (1) | V | I | IV | II | VI | III |
| <input checked="" type="checkbox"/> (2) | VI | V | II | I | III | IV |
| (3) | IV | V | II | III | I | VI |
| (4) | VI | V | I | II | III | IV |

7. Kernel functions provided in response to requests are called

- (1) Paging
- (2) System calls
- (3) Algorithms
- (4) All of the above

8. A special effect in motion pictures and animations that changes one image or shape into another through a seamless transition is known as

- (1) Shuffling
- (2) Morphing
- (3) Montage
- (4) None of the above

9. A set of processes is deadlock if

- (1) Each process is blocked and will be forever
- (2) Each process is terminated
- (3) All processes are trying to kill each other
- (4) None of the above

10. Which of the following is **not** a valid variable name declaration ?

(1) int __a3;

(2) int __3a;

(3) int __A3;

(4) None of the above,

11. In Round Robin CPU scheduling, as time quantum is increased, the average turnaround time

(1) Increases,

(2) Decreases

(3) Remains constant

(4) Varies irregularly

12. The new process created by a system call is

(1) Execve

(2) Fork,

(3) Got

(4) Abort

13. Match List I with List II :

List I

List II

A. Multilevel feedback queue

B. FCFS

C. Preemptive SJF

D. Round Robin Scheduling

I. Time slicing

II. Criteria to move process between queue

III. Batch processing

IV. Starvation

Select the code for the correct answer from the options given below :

A B C D

(1) I III II IV

(2) IV III II I

(3) III II IV I

(4) II III IV I

14. Which of the following is true for variable names in C ?

- (1) They can contain alphanumeric characters as well as special characters.
- (2) It is not an error to declare a variable to be one of the keywords (like goto, static).
- (3) Variable names cannot start with a digit. ✓
- (4) Variable can be of any length. ✓

15. In which technique is there an improved memory utilization and reduced overhead compared to dynamic partitioning ?

- (1) Fixed partitioning
- (2) Simple paging ✓ (F)
- (3) Virtual memory paging
- (4) Simple segmentation

16. Which of the following memory allocation schemes suffer from memory fragmentation ?

- (1) Segmentation ✓ (F)
- (2) Pure demand paging
- (3) Swapping
- (4) Paging

17. Virtual memory based memory management algorithm partially swaps out a process. This is an example of

- (1) Short-term scheduling
- (2) Long-term scheduling
- (3) Medium-term scheduling
- (4) Mutual exclusion ✓ (X)

18. Percentage of times that a page number is found in the TLB is known as

- (1) Hit ratio ✓
- (2) Protection ratio
- (3) Copy ratio
- (4) None of the above

19. The list which records all disk blocks that are free, those that are not allocated to some file or directory, is

- (1) Free space list ✓
- (2) File space list
- (3) Record list
- (4) None of the above

20. The main function of the command interpreter is

- (1) to get and execute the next user-specified command
- (2) ✓ to provide the interface between the API and application program
- (3) to handle the files in operating system
- (4) None of the above

(A)

21. The scheduler that selects a process from among the processes that are ready to execute and allocates the CPU to it, is called

- (1) Long-term scheduler
- (2) Medium-term scheduler
- ✓ (3) Short-term scheduler
- (4) ✗ None of the above

22. Which of the following operating systems reads and reacts in actual time ?

- (1) Quick Response System ✓
- (2) Real Time System
- (3) Time Sharing System
- (4) Batch Processing System

(D)

23. When there is enough memory to fit a process in memory, but the space is not contiguous we need

- (1) Internal Fragmentation
- ✓ (2) External Fragmentation
- (3) Virtual Fragmentation
- (4) None of the above

24. What is meant by memory compaction ?

- (1) Combine multiple equal memory holes into one big hole
- (2) Combine multiple small memory holes into one big hole ✓
- ✗ (3) Divide big memory hole into required number of small holes
- (4) Divide memory into 2 parts

(B)

25. A collection of physically separate, possibly heterogeneous, computer systems that are networked to provide the users with access to the various resources that the system maintains is called

- ✓ (1) Distributed system
- (2) Real-time system
- (3) Time-sharing system
- (4) Handheld system

26. Which of the following is a valid declaration of an object of class Box in Java ?

- ✓ (1) ~~Box~~ obj = new Box();
- (2) Box obj = new Box;
- (3) obj = new Box();
- (4) new Box obj;

27. In linked list representation, graph is stored in

- (1) Edge list †
- (2) Vertex list ✗
- ✓ (3) Adjacency list ✓
- (4) None of the above †

28. In relation to operations on non-primitive data structures

- A. Traversing is the process of visiting each element in the data structure exactly once.
- B. Merging is the process of combining elements in two different structures.
- C. Searching is the process of finding the location of the elements.

Which of the above is/are correct ?

Select the code for the correct answer from the options given below :

- (1) A only
- (2) A and B only
- ✓ (3) A, B and C
- (4) B only

29. In relation to strings

- A. String is a linear data structure.
- B. String is useful for non-numeric applications.
- C. Word processing is an application of strings.
- D. String is a sequence of zero or more characters.

Which of the above is/are correct ?

Select the code for the correct answer from the options given below :

- (1) A only ✗
- ✓ (2) A, B, C and D
- (3) A, B and C only
- (4) B, C and D only ✗

30. A distributed system is

- (1) A collection of possibly heterogeneous computer systems that are networked to provide the users with access to the various resources that the system maintains.
- (2) A collection of physically separate computer systems that are networked to provide the users with access to the various resources that the system maintains.
- (3) A collection of physically separate, possibly heterogeneous computer systems that are networked to provide the users with access to the various resources that the system maintains.
- (4) A collection of computer systems that are networked to provide the users with access to the various resources that the system maintains.

31. In Tower of Hanoi problem, with n disks, the number of moves from source to destination is

- (1) $2^n - 1$
- (2) 2^{n-1}
- (3) $2^n + 1$
- (4) 2^{n+1}

32. In relation to linked list

- A. It is a linear collection of data elements called nodes.
- B. Each node of the list is divided into two parts, information and link field.
- C. List which has no nodes is null list.

Which of the above is/are correct ?

Select the code for the correct answer from the options given below :

- (1) A only
- (2) A and B only
- (3) A, B and C
- (4) B only

33. In case of linked list deletion, which of the following is correct ?

- (1) If there are no nodes in linked list deletion is not possible
- (2) If list is traversed and node is not found, deletion is not possible
- (3) Deletion occurs as soon as next pointer field of list is changed
- (4) All of the above

34. Which of the following is an example problem for recursion technique ?

- (1) Factorial
- (2) GCD
- (3) Fibonacci
- (4) All of the above

35. In relation to trees

- A. Trees are non-linear data structures.
- B. Trees are used to represent hierarchical data.
- C. A node is a terminal node if it has no children.

Which of the above is/are correct ?

Select the code for the correct answer from the options given below :

- (1) A only
- (2) A and B only
- (3) A, B and C
- (4) B only

36. Which of the following is binary tree property ?

- (1) In a binary tree T , the number of external nodes is one more than the number of internal nodes
- (2) The maximum number of nodes in a particular level I of a binary tree is given by the expression 2^{I-1} ✓
- (3) The maximum number of nodes upto a particular level I of the binary tree is given by the expression $2^I - 1$
- (4) All of the above

37. In case of graphs

- A. Graph is a non-linear data structure.
- B. Graph consists of two sets, set of vertices and set of edges.
- C. If both vertex set and edge set are finite, graph is finite.

Which of the above is/are correct ?

Select the code for the correct answer from the options given below :

- (1) A only
- (2) A and B only
- (3) A, B and C
- (4) A and C only

38. In case of searching, which of the following is correct ?

- (1) Linear search involves comparing array elements one after another
- (2) Binary search involves comparing with middle element of array
- (3) Binary search may be defined recursively

(4) All of the above

39. Column-major and Row-major order methods are related to memory representation of

- (1) Graphs
- (2) Trees
- (3) Arrays
- (4) None of the above

40. In relation to queue data structure, which of the following is correct ?

- (1) In circular queue, once the queue is full, REAR points to the first element of queue.
- (2) In degree, insertion and deletion can be performed from both ends.
- (3) In priority queue, each element has been assigned a priority.
- (4) All of the above

41. Which of the following is correct in case of quick sort ?

- (1) It is one of the best techniques for a large set of data
- (2) It works on the method of partitioning
- (3) The process of divide and conquer is recursively applied
- (4) All of the above

42. C-program can be compiled using

- A. Visual Studio 2010 Professional
- B. NetBeans IDE 6.9.1
- C. gcc ✓
- D. Borland C++ 4.5

Select the code for the correct answer from the options given below :

- (1) C and D only ✓
- (2) A and B only ✗
- (3) A, C and D only ✓
- ✓ (4) All of the above

43. C-character set includes

- A. Alphabets
- B. Digits
- C. Special Symbols
- D. Constants, variables and key words

Select the code for the correct answer from the options given below :

- (1) A and B only
- ✓ (2) A, B and C only ✓
- (3) D only ✓
- (4) A only

44. Which statements are true with respect to LINKER ?

- A. A program that links separately compiled modules into one program.
- B. Combines the functions in the standard C-library with the code that you wrote.
- C. The output of linker is an executable program.
- D. Object code is the input to the linker.

Select the code for the correct answer from the options given below :

- (1) A, B and C only
- (2) B and C only
- (3) A and D only
- (4) All of the above

45. Which statements are true with respect to constants ?

- A. Constants refers to fixed value that the program may not alter.
- B. Constants can be of any of the basic data types.
- C. Constants are also called literals.
- D. Character constants enclosed in single quote.

Select the code for the correct answer from the options given below :

- (1) ✓ A, B and C only ✓
- (2) A and B only ✓
- (3) B and D only ✗
- (4) All of the above ✗

46. Arrange precedence of arithmetic programs from highest to lowest :

- A. + -
- B. - (unary minus)
- C. * / %
- D. ++ -- ✓

Select the code for the correct answer from the options given below :

- (1) A, B, C, D
- (2) D, B, C, A ✓
- (3) C, D, B, A ✓
- (4) B, A, C, D

47. Consider the following statements :

- A. Function cannot return more than one value at a time. ✓
- B. Every function must return a value. ✓
- C. Function cannot return a floating point number. ✓
- D. It is not compulsory to collect the value returned from a function. ✓

Which of the above statements are correct ?

Select the code for the correct answer from the options given below :

- (1) ✓ A and D only
- (2) A and B only
- (3) B and C only
- (4) B and D only

48. Consider the following statements :

- A. A pointer is a variable which contains the address of the memory location.
- B. The address of the variable can be obtained by using the & ampersand symbol.
- C. An array name is pointer.
- D. Pointer is declared with * asterisk symbol.

Which of the above statements is/are correct ?

Select the code for the correct answer from the options given below :

- (1) A and B only
- (2) A, B and D only ✓
- (3) B only
- (4) All of the above ✓

49. In the array declaration `int a[5][3];`

- A. ✓ Array contains 5 rows and 3 columns.
- B. Array contains 3 rows and 5 columns.
- C. Last row and last column is referred with `a[5][3]`.
- D. First row and first column is referred with array name.

Which of the above statements are correct ?

Select the code for the correct answer from the options given below :

- (1) ✓ A, C and D only
- (2) B, C and D only
- (3) B and C only
- (4) A and D only

50. Determine the output of the following program :

```
#include<stdio.h>
void main ()
{
    int num = 20;
    printf("%d",++ num ++);
}
```

- (1) 22
- (2) 21 ✓
- (3) 20
- (4) compiler error ✓

51. Determine the output of the following program :

```
#include<stdio.h>
int main()
{
    int i;
    char str[25]="welcome";
    for ( i = 0 ;str[i] !='\0';i++ );
    printf("%d",i);
}
```

- (1) 1 2 3 4 5 6 7
- (2) 0 1 2 3 4 5 6 ✓
- (3) 7 ✓
- (4) compiler error

52. Determine the output of the following program :

```
#include<stdio.h>
int main()
{
    unsigned int i =5;
    while(i >=0)
    printf("%d",i --);
}
```

- (1) infinite loop
- (2) 5 4 3 2 1 0 ✓
- (3) 4 3 2 1 0
- (4) 5 4 3 2 1

53. The first and second arguments of fopen are

- (1) A character string containing the name of the file and the second argument is the mode ✓
- (2) A character string containing the name of the user and the second argument is the mode
- (3) A character string containing the pointer and the second argument is the mode
- (4) None of the above

54. What is meant by 'a' in the following operation ?

```
fp = fopen("Random.txt","a");
```

- (1) Attach
- (2) Append ✓
- (3) Apprehend
- (4) Add

55. Which of the following fopen statements is illegal ?

- (1) fp = fopen("xyz.txt","r");
- (2) fp = fopen("/home/user1/abc.txt","w");
- (3) fp = fopen("xyz","w");
- (4) None of the above ✓

56. Which operator connects the structure name to its member name ?

- (1) - (MINUS)
- (2) . (DOT) ✓
- (3) -> (ARROW)
- (4) Both (1) and (2)

57. What would be the size of the following union declaration ?

```
union u Temp
{
double a;
int b[10];
char c;
}u;
```

(Assuming size of double = 8,
size of int = 4, size of char = 1)

- (1) 4
- (2) 8
- (3) 40
- (4) 80

58. The correct set of statements with reference to an operating system are

An operating system

- A. For mobile computers provides an environment in which a user can easily interface with the computer to execute programs.
- B. Is a program that manages a computer's hardware. ✓
- C. Provides a basis for application programs.
- D. Acts as an intermediary between the computer user and the computer hardware. ✓
- E. Is a control program that manages the execution of user programs to prevent errors and improper use of the computer. ✓

Select the code for the correct answer from the options given below :

- (1) ✓ B, C, D and E
- (2) A, B, D and E ✗
- (3) A, B, C and E ✓
- (4) All of the above ✗

59. What is the output of this C code ?

```
#include<stdio.h>
void main()
{
int i = 0, j = 0;
for (i = 0; i < 5; i++)
{
for (j = 0; j < 4; j++)
{
if (i > 1)
break;
}
printf ("Hi \n");
}
}
```

- (1) Hi is printed 5 times ✓
- (2) Hi is printed 9 times
- (3) Hi is printed 7 times
- (4) Hi is printed 4 times

60. When representing any algebraic expression E in a 2-tree, which uses only binary operations

- (1) The variables and operations in E will appear only in internal nodes. ✗
- (2) The operations in E will appear as external nodes and variables in internal nodes.
- (3) The variables in E will appear as external nodes and operations in internal nodes.
- (4) The variables and operations in E will appear only in external nodes.

61. _____ data structure uses the index to refer to its individual items.

- (1) Linear array
- (2) Linked list
- (3) Stack
- (4) Queue

62. A graph is a collection of nodes called _____ and line segments called _____ that connect pairs of nodes.

- (1) Vertices, Paths
- (2) Paths, Edges \times
- (3) Vertices, Edges \checkmark
- (4) Vertices, Vertices \times

63. In a linear search



- (1) Search starts at the middle and goes to left or right depending on the case \checkmark
- (2) Search starts at the beginning of the list and checks every element in the list until either the search is successful or the list ends \checkmark
- (3) Computes a hash value and compares
- (4) Search is randomly carried out

64. In the _____ traversal, we visit all of a vertex's descendants before we move on to an adjacent vertex.

- (1) Breadth First
- (2) Depth First \checkmark
- (3) Inorder \checkmark
- (4) Preorder \checkmark



65. The inorder traversal of a tree resulted in G C F A E B D; then the preorder traversal would return

- (1) A B C D E F G
- (2) G F E D C B A
- (3) G F C E D B A
- (4) A C G F B E D

66. For binary search algorithm, which of the following is **not** a required condition ?

- (1) The list must be sorted \checkmark
- (2) There must be an easy mechanism to delete and/or insert elements in the list
- (3) There should be a direct access to the middle element in any sub-list
- (4) None of the above



67. A variable P is called pointer if

- (1) P contains the address of first element in DATA
- (2) P can store only DATA value \checkmark
- (3) P contains the address of an element in DATA \checkmark
- (4) P contains the Data and the address of DATA



68. Each data item in a record may be a group item composed of sub-items; those items which are indecomposable are called

- (1) Atoms
- (2) Scalars
- (3) Elementary items
- (4) All of the above

69. When there is no available space and new data are to be inserted into a data structure, then this situation is usually called

- (1) Overflow ✓
- (2) Underflow
- (3) Housefull
- (4) Saturated

70. The time complexity of binary search is

- (1) $O(n)$
- (2) $O(n \log n)$
- (3) $O(\log n)$ ✓
- (4) $O(1)$

71. The situation when in a linked list $START=NULL$ and deletion occurs is

- (1) Houseempty
- (2) Overflow
- (3) Underflow ✓
- (4) Housefull

72. If you want to convert a recursive algorithm to a non-recursive one, which data structure is most likely to be used ?

- (1) Array
- (2) Stack
- (3) Queue ✓
- (4) Tree



73. If the post-order and in-order traversal of a binary tree has the same output, then the binary tree has

- (1) One node ✓
- (2) Two nodes
- (3) Three nodes
- (4) Any number of nodes



LT R
LR

(29 - B)

74. Consider the following two statements :

- A. To find the predecessor, it is required to traverse the list from the first node in case of singly linked list. ✓
- B. Using singly linked circular list, it is not possible to traverse the list backwards. ✓

Which of the above statements is/are correct ?

Select the code for the correct answer from the options given below :

- (1) A only
- (2) B only
- (3) Both A and B ✓
- (4) Neither A nor B

75. If a stack is represented by a linked list, then the pop operation is carried by

- (1) Deleting the node pointed by START
- (2) Deleting the last node ✓
- (3) Deleting in the middle of the list
- (4) None of the above

76. A complete binary tree has depth, given by the formula (where n is the number of nodes)

- (1) $n \log_2 n$
- (2) $\log_2 n$ ✓
- (3) $\log_2 n + 1$ ✓
- (4) $n \log_2 n + 1$

77. In a graph, if we can split all the nodes into two sets V_1 and V_2 , such that there are no edges between two vertices of V_1 or between two vertices of V_2 , then it is called

- (1) Partite
- (2) Double graph
- (3) Bipartite ✓
- (4) Bisects

78. Life cycle of a process includes the following states :

- (1) Newborn, Ready, Running, Waiting and Terminated ✓
- (2) Initiated, Ready, Running, Waiting and Halted ✓
- (3) New, Ready, Running, Blocked and Terminated ✓
- ✓ (4) New, Ready, Running, Waiting and Terminated ✓

79. The following operating system is used as a control device in dedicated applications :

- ✓ (1) Real-time system ✓
- (2) Time-sharing system
- (3) Multiprogramming system
- (4) Handheld system ✓

80. The following scheduling policy is most suitable for Time-sharing systems :

- (1) FCFS
- (2) SJF
- ✓ (3) Round-Robin
- (4) Priority

81. In the communication of two processes, an endpoint for communication is called

- (1) Socket
- (2) Pipe
- (3) Port
- ✓ (4) Remote procedure call



82. The correct set of operating system functions is

- (1) Process management, Memory management, Device management, Security management, User management ✓
- (2) Process management, Memory management, Data management, Security management, File management ✓
- ✓ (3) Process management, Memory management, Device management, Security management, File management
- (4) Processor management, Memory management, Device management, Security management, File management

83. The memory allocation strategy that picks the smallest hole to satisfy the request is

- (1) First fit
- ✓ (2) Best fit ✓
- (3) Worst fit
- (4) Next fit

84. Consider the following page reference string :

7,0,1,2,0,3,0,4,2,3,0,3,2,1,2,0,1,7,0,1

For LRU page replacement algorithm with 3 frames, the number of page faults is

- (1) 15
- (2) 14
- (3) 13
- (4) 12

85. A process is thrashing

- (1) If it is spending more time in paging than executing
- (2) If it is spending more time in swapping than executing
- (3) If it is spending more time in switching than executing
- (4) If it is spending more time in executing than paging

86. A technique that enables us to map a large logical address space onto a smaller physical memory is called

- (1) Mapping
- (2) Swapping
- (3) Virtual memory
- (4) Demand paging

87. A memory management scheme in which a page is *not* loaded into main memory until it is needed is called

- (1) Paging
- (2) Pure paging
- (3) Demand paging
- (4) None of the above

88. A page-replacement algorithm that allows a process to select a replacement frame from the set of all frames, even if that frame is currently allocated to some other process is called

- (1) Local page-replacement algorithm
- (2) Global page-replacement algorithm
- (3) LRU page-replacement algorithm ??
- (4) None of the above

89. A file attribute that identifies the file within the file system is

- (1) Identifier
- (2) Name
- (3) Type
- (4) Location

90. In the indexed allocation method in the file system

- (1) All the pointers to the scattered blocks are brought together into one location
- (2) Each file is a set of contiguous blocks on the disk
- (3) Each file is a linked list of disk blocks
- (4) Each file is a linked list of disk blocks with scattered pointers

91. Select the correct definition for DO-WHILE loop from the following :

- (1) Test expression is evaluated first
- (2) Entry controlled loop
- (3) Post-testing loop
- (4) Fixed execution loop

92. Pick out the statement which is *not* correct in case of 'Continue' statement.

- (1) Cannot be used in switch statement.
- (2) Skips the statements following it, in the loop.
- (3) Control is transferred back to the loop.
- (4) Causes premature exit of the loop.

93. Which statement among the following is *not* true for an array ?

- (1) An array is a collection of homogeneous elements.
- (2) Elements of different data types can be stored in a single array.
- (3) Arrays are useful for sorting operations.
- (4) A subscript gives the position of an array element.

94. The order in which recursive functions are executed is

- (1) Parallel order
- (2) Last in first out order
- (3) First in last out order
- (4) Iterative order

95. Pick out the correct statement from the following :

- (1) In a function call, formal arguments must match the actual arguments in order, number and type.
- (2) A function can return any number of values to the called function.
- (3) A function cannot call another function.
- (4) A function name can be a keyword.

96. What is the output of the following program segment ?

```
{ int a=10;
  int *p=&a;
  printf("%d,%d",a, *p);
}
```

- (1) 10, address of a
- (2) 10, 10
- (3) 10, address of p
- (4) address of a, address of p

97. Select the statement which is **not** true in case of a pointer.

- (1) Can manipulate data which is at different memory location. ✓
- (2) Helps in dynamic memory allocation.
- (3) Helps in more compact and efficient coding.
- (4) A pointer requires same memory space as the data type which it is pointing to.

98. The following operation **cannot** be performed on pointers :

- (1) Multiplication of two pointers
- (2) Adding an integer value to a pointer
- (3) Subtracting an integer value from a pointer
- (4) Comparing two pointers if both point to the same array

99. Which of the following is **not** true for a structure ?

- (1) It is the collection of dissimilar elements.
- (2) It is defined using keyword 'struct'.
- (3) Elements need not be in contiguous memory location.
- (4) An array can be a member of a structure.

100. Number of bytes in memory, taken by a variable of the following type of structure is

struct s

```
{ int k; char c; };
```

- (1) Only size of an integer
- (2) Size of an integer + size of a character
- (3) Depends on the platform
- (4) Only size of a character