APSET

Previous Year Paper

2014 Paper II Computer Science and Application

SUBJECT CODE	SUBJECT	PAPER
A-04-02	COMPUTER SCIENCE AND APPLICATIONS	II

HALL TICKET NUMBER	QUESTION BOOKLET NUMBER
	500885

OMR SHEET NUMBER

DURATION	MAXIMUM MARKS	NUMBER OF PAGES	NUMBER OF QUESTIONS
1 HOUR 15 MINUTES	100	16	50

This is to certify that, the entries made in the above portion are correctly written and verified.

Candidate's Signature

Name and Signature of Invigilator

Instructions for the Candidates

1. Write your Hall Ticket Number in the space provided on the top of this page.
2. This paper consists of fifty multiple-choice type of questions.
3. At the commencement of examination, the question booklet will be given to you. In the first 5 minutes, you are requested **to open the booklet and compulsorily examine it as below**:
   (i) To have access to the Question Booklet, tear off the paper seal on the edge of this cover page. Do not accept a booklet without sticker-seal and do not accept an open booklet.
   (ii) **Tally the number of pages and number of questions in the booklet with the information printed on the cover page. Faulty booklets due to pages/questions missing or duplicate or not in serial order or any other discrepancy should be got replaced immediately by a correct booklet from the invigilator within the period of 5 minutes. Afterwards, neither the Question Booklet will be replaced nor any extra time will be given.**
   (iii) After this verification is over, the Test Booklet Number should be entered in the OMR Sheet and the OMR Sheet Number should be entered on this Test Booklet.
4. Each item has four alternative responses marked (A), (B), (C) and (D). You have to darken the circle as indicated below on the correct response against each item.
   Example: (A) (B) ● (D)
   where (C) is the correct response.
5. Your responses to the items are to be indicated in the **OMR Answer Sheet given to you**. If you mark at any place other than in the circle in the Answer Sheet, it will not be evaluated.
6. Read instructions given inside carefully.
7. Rough Work is to be done in the end of this booklet.
8. If you write your name or put any mark on any part of the OMR Answer Sheet, except for the space allotted for the relevant entries, which may disclose your identity, you will render yourself liable to disqualification.
9. **The candidate must handover the OMR Answer Sheet to the invigilators at the end of the examination compulsorily** and must not carry it with you outside the Examination Hall. The candidate is allowed to take away the carbon copy of OMR Sheet and used Question paper booklet at the end of the examination.
10. **Use only Blue/Black Ball point pen.**
11. **Use of any calculator or log table etc., is prohibited.**
12. **There is no negative marks for incorrect answers.**

అభ్యర్థులకు సూచనలు

1. ఈ పుట పై భాగంలో ఇవ్వబడిన స్థలంలో మీ హాల్ టికెట్ నంబరు రాయండి.
2. ఈ ప్రశ్న పత్రము యాభై బహుళైచ్ఛిక ప్రశ్నలను కలిగి ఉంది.
3. పరీక్ష ప్రారంభమున ఈ ప్రశ్నాపత్రము మీకు ఇవ్వబడుతుంది. మొదటి ఐదు నిమిషములలో ఈ ప్రశ్నాపత్రమును తెరిచి కింద తెలిపిన అంశాలను తప్పనిసరిగా సరిచూసుకోండి.
   (i) ఈ ప్రశ్న పత్రమును చూడడానికి కవర్‌పేజి అంచున ఉన్న కాగితపు సీలును చించండి. స్టిక్కర్ సీలులేని మరియు ఇదివరకే తెరిచి ఉన్న ప్రశ్నాపత్రమును మీరు అంగీకరించవద్దు.
   (ii) కవరు పేజి పై ముద్రించిన సమాచారం ప్రకారం ఈ ప్రశ్నపత్రములోని పేజీల సంఖ్యను మరియు ప్రశ్నల సంఖ్యను సరిచూసుకోండి. పేజీల సంఖ్యకు సంబంధించి గానీ లేదా సూచించిన సంఖ్యలో ప్రశ్నలు లేకపోవుట లేదా నిజపతి కాకపోవుట లేదా ప్రశ్నలు క్రమపద్ధతిలో లేకపోవుట లేదా ఏవైనా లేదాలుండుట వంటి దోషపూరితమైన ప్రశ్న పత్రాన్ని పొందిన మొదటి ఐదు నిమిషాల్లో పరీక్షా పర్యవేక్షకునికి తిరిగి ఇచ్చేసి దానికి బదులుగా సరిగ్గా ఉన్న ప్రశ్నపత్రాన్ని తీసుకోండి. తదనంతరం ప్రశ్నపత్రము మార్చబడదు అదనపు సమయం ఇవ్వబడదు.
   (iii) పై విధంగా సరిచూసుకొన్న తర్వాత ప్రశ్నాపత్రం సంఖ్యను OMR పత్రము పై అదేవిధంగా OMR పత్రము సంఖ్యను ఈ ప్రశ్నాపత్రము పై నిర్దిష్టస్థలంలో రాయవలెను.
4. ప్రతి ప్రశ్నకు నాలుగు ప్రత్యామ్నాయ ప్రతిస్పందనలు (A), (B), (C) మరియు (D) లుగా ఇవ్వబడ్డాయి. ప్రతిప్రశ్నకు సరైన ప్రతిస్పందనను ఎన్నుకొని కింద తెలిపిన విధంగా OMR పత్రములో ప్రతి ప్రశ్నా సంఖ్యకు ఇవ్వబడిన నాలుగు వృత్తాల్లో సరైన ప్రతిస్పందనను సూచించే వృత్తాన్ని బాల్ పాయింట్ పెన్‌తో కింద తెలిపిన విధంగా పూరించాలి.
   ఉదాహరణ: (A) (B) ● (D)
   (C) సరైన ప్రతిస్పందన అయితే
5. ప్రశ్నలకు ప్రతిస్పందనలను ఈ ప్రశ్నపత్రముతో ఇవ్వబడిన OMR పత్రము పైన ఇవ్వబడిన వృత్తాల్లోనే పూరించి గుర్తించాలి. అలాకాక సమాధాన పత్రంపై వేరొక చోట గుర్తిస్తే మీ ప్రతిస్పందన మూల్యాంకనం చేయబడదు.
6. ప్రశ్న పత్రము లోపల ఇచ్చిన సూచనలను జాగ్రత్తగా చదవండి.
7. చిత్తుపనిని ప్రశ్నపత్రము చివర ఇచ్చిన ఖాళీస్థలములో చేయాలి.
8. OMR పత్రము పై నిర్ణీత స్థలంలో సూచించవలసిన వివరాలు తప్పించి ఇతర స్థలంలో మీ గుర్తింపును తెలిపే విధంగా మీ పేరు రాయడం గానీ లేదా ఇతర చిహ్నాలను పెట్టడం గానీ చేసినట్లయితే మీ అనర్హతకు మీరే బాధ్యులవుతారు.
9. పరీక్ష పూర్తయిన తర్వాత మీ **OMR** పత్రాన్ని తప్పనిసరిగా పరీక్ష పర్యవేక్షకుడికి ఇవ్వాలి. వాటిని పరీక్షగది బయటకు తీసుకువెళ్లకూడదు. పరీక్ష పూర్తయిన తరువాత అభ్యర్థులు ప్రశ్న పత్రాన్ని, OMR పత్రం యొక్క కార్బన్ కాపీని తీసుకువెళ్లనవ్వు.
10. నీలి/నల్ల రంగు బాల్ పాయింట్ పెన్ మాత్రమే ఉపయోగించాలి.
11. లాగరిథమ్ టేబుల్స్, కాలిక్యులేటర్‌లు, ఎలక్ట్రానిక్ పరికరాలు మొదలగునవి పరీక్షగదిలో ఉపయోగించడం నిషేధం.
12. తప్పు సమాధానాలకు మార్కుల తగ్గింపు లేదు.

COMPUTER SCIENCE AND APPLICATIONS
Paper – II

1. Coupling and cohesion can be represented using a
   (A) Cause effect graph
   (B) Dependence matrix
   (C) Structure chart
   (D) Bar graph

2. The property that no party to a contract can later deny having signed, is called
   (A) Denial of service
   (B) Non repudiation
   (C) Masquerading
   (D) Repudiation

3. Modulation of a modulating signal with a very large carrier frequency in wireless transmission is necessary due to
   (A) Antenna requirements and the need to multiplex the multiple channels and users at the transmitter
   (B) Smaller antenna size at high frequencies
   (C) Bending of the beams at high frequencies
   (D) Mobile requirements

4. Entity integrity specifies
   (A) Primary key value can be null
   (B) Primary key value cannot be null
   (C) Foreign key can be null
   (D) Super key can be null

5. Functional dependencies are a generalization of
   (A) Key dependencies
   (B) Relation dependencies
   (C) Database dependencies
   (D) None of these

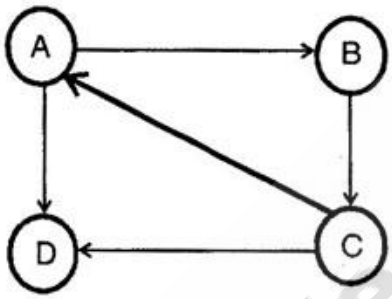
6. In Unix $(6\ 3\ 4)_8$ represent the permission for a file as
   (A) rw_ _wx r__
   (B) _wx r_x _w_
   (C) __x r__ _w_
   (D) rwx rwx rwx

7. What will be the output, if you will compile and execute the following 'C' code?

```
main ( )
{
    Static int var= 5;
    Printf (" % d",var_ _);
    if (var)
    main ( );
}
```

(A) 4 3 2 1 0
(B) 5 4 3 2 1
(C) 1 2 3 4 5
(D) 3 2 1 0 0

8. Which of the following statements is TRUE with respect to the following directed graph ?



I. The sum of the out degree of the node C and the in-degree of the node A is 4
II. The sum of the out-degree of node A and the in-degree of the node D is 4

(A) I and II are TRUE
(B) I is TRUE but II is not
(C) II is TRUE but not I
(D) Both I and II are TRUE

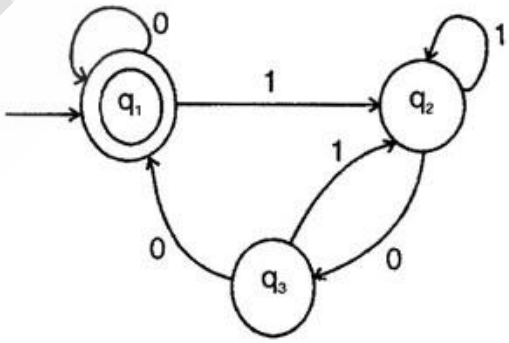
9. The number of 5-digit numbers that can be formed by the digits 0, 1, 2, 3, 4, 5 which are divisible by 5 is

(A) 196 (B) 144
(C) 600 (D) 300

10. If 12 people are choosen at random then the probability that they will have their birthdays in different calendar months is

(A) $\frac{11!}{12^{11}}$ (B) $\frac{12}{12^{12}}$
(C) $\frac{12!}{(12!)^{12}}$ (D) $\frac{11}{12}$

11. What is the regular expression corresponding to the following state diagram ?



(A) $0 + (1+01)^*$
(B) $(0 + 1(1+ 01)^*00)^*$
(C) $(11+01^*)(1^*+0^*)^*$
(D) $(0^*0+11^*)^*$

12. The maximum number of errors that a code C can correct if the minimum distance between any two code words of C is 7 is

(A) 3

(B) 4

(C) 5

(D) 6

13. Listed below are some of the Operating System abstractions and related hardware components :

i) Thread	p) Interrupt
ii) Virtual Address Space	q) Memory
iii) File System	r) CPU
iv) Signal	s) Disk

Which of the following correctly relates the Operating System abstractions and related hardware components ?

(A) i-p, ii-q, iii-r, iv-s

(B) i-r, ii-s, iii-q, iv-p

(C) i-r, ii-q, iii-s, iv-p

(D) i-r, ii-p, iii-q, iv-s

14. Typical bandwidth of optical fibres is

(A) Order of GHz

(B) Order of KHz

(C) Order of Hz

(D) Order of MHz

15. Using 2's complement, subtraction of $(1010)_2$ from $(0011)_2$ is

(A) $(0111)_2$

(B) $(1001)_2$

(C) $-(0111)_2$

(D) $-(1001)_2$

16. The term 'baud' is a measure of the

(A) Speed at which data travels over the communication line

(B) Memory capacity

(C) Instruction execution time

(D) Process waiting time

17. Consider a transport layer with maximum segment size as 1 KB. Also, consider at a particular point of time, the parameters receiver's window, congestion window are set to 1024 KB, 256 KB respectively, at which time, the transmission of a packet resulted in a timeout. What will be the values of congestion window and threshold respectively for the next transmission ?

(A) 1024 KB, 256 KB

(B) 1 KB, 128 KB

(C) 1K B, 256 KB

(D) 1024 KB, 128 KB

18. Direct files are stored on

(A) DASD (Direct Access Storage Device)

(B) SASD (Sequential Access Storage Device)

(C) Magnetic tape

(D) Primary Storage Device

19. The number of element comparisons required for linear search and binary search in the worst case are proportional to

(A) log n

(B) log n, n

(C) n^2, n

(D) n, n

20. The height of a full binary tree with N internal nodes

(A) is about $\log_2 N$

(B) is about $\log_3 N$

(C) is about $\log_{2-1} N$

(D) is about $\log_{3-1} N$

21. The task of relocation is to

(A) Add some constant value of each relative address in the segment

(B) Scheme various loading function

(C) Linking and loading

(D) Allow independent translations of programs at the same time

22. Compaction is used in

(A) Paging

(B) Contiguous memory allocation

(C) Segmentation

(D) Disk fragmentation

23. Assembly language is called the low-level language, because it is

(A) Close to the machine language in structure and function

(B) Not the machine language

(C) Easy to use

(D) It is written using mnemonic code

24. Which of the following IP address class is Multicast ?

(A) Class D

(B) Class C

(C) Class B

(D) Class A

25. Reverse address resolution protocol is used

(A) To find IP address, by broadcasting ethernet address

(B) To find Ethernet address, by broadcasting IP address

(C) To find the class to which it belongs

(D) To find the multicast address

26. Find the class, Netid, Hostid for the following IP address

141.14.25.78

(A) Class C, 141.14.25, 78

(B) Class D, Not applicable

(C) Class A, 141, 14.25.78

(D) Class B, 141.14, 25.78

27. The model in which the requirements are implemented by category is

(A) Evolutionary Development Model

(B) Waterfall Model

(C) Prototyping

(D) Iterative Enhancement Model

28. Which of the following is not a determinant for software quality and organizational effectiveness ?

(A) Customer characteristics

(B) Business conditions

(C) Software conditions

(D) Development environment

29. The process is measured in terms of maturity levels such as

(A) Initial, repeatable, defined, managed optimized

(B) Primary, secondary, defined, managed optimized

(C) Initial, stating, defined, managed optimized

(D) Primary, secondary, stating, managed optimized

30. In computer terminology, the term 'digital signature' refers to

(A) The digitized signature of a person

(B) An encryption standard

(C) The procedure used for data compression

(D) Encrypted message digest

31. What will be the position of the file marker ?

fseek (ptr, 0, SEEK _ CUR);

(A) The SEEK_CUR sets the file position marker to the current position

(B) The SEEK_CUR sets the file position to the starting of the file

(C) The SEEK_CUR sets the file position to the ending of the file

(D) The SEEK_CUR sets the file position to the middle of the file

32. Combine the following two statements into one.

Char *p;

p = (char *) malloc (100);

(A) Char p = *malloc (100);

(B) Char *p = (char) malloc (100);

(C) Char *p = (char*) malloc (100);

(D) Char *p = (char *) (malloc *) (100);

33. An attribute A of data type varchar (20) has the value "Avi". The attribute B of data type char (20) has value "Reed". Here attribute A has _____ spaces and attribute B has _____ spaces.

(A) 3, 20

(B) 20, 4

(C) 20, 20

(D) 3, 4

34. What is 'ROLAP' ?

(A) ROLAP is an OLAP engine for multidimensionals and SQL based OLAP operations

(B) ROLAP is an OLAP engine for multidimensional models and SQL operations

(C) ROLAP is an OLAP engine for multidimensional models and SQL queries, but does not support 'slice' and 'dice' operations

(D) ROLAP is a set of relational operations equivalent to OLAP operations

35. Digital audio and video broadcasting

(A) Uses one of the broadcast disk models

(B) Uses flat-disk broadcast model

(C) Does not use any of the broadcast disk models

(D) Uses multi-level disk model

36. What does the following query do ?

Select SAL+ NVL (COMM, 0) from EMP;

(A) Displays the total salary of all employees. The null values in the commission column will be replaced by 0 and added to salary

(B) Displays only the total salary of all employees

(C) Displays the total salary of all employees. The values in the commission column will be replaced by 0 and added to salary

(D) The values in the commission column will be replaced by 0

37. What is the output of the following query?

Select TRUNC (1234.5678, – 2) from dual;

(A) 1234.56

(B) 1234.00

(C) 1200

(D) 1234.57

38. One mega byte is equal to

(A) 2^{23} bits

(B) 2^{20} bits

(C) 2^{10} bits

(D) 2^{40} bits

39. What will be the output of the program ?

```
Class Test
{
    Public static  Void main (String [ ] args)
    {
        int  X = 20;
        String Sup = (X < 15)? "Small" :
        (X < 22)?
                        "tiny" : "huge";
        System .out . Println (Sup);
    }
}
```

(A) small

(B) tiny

(C) huge

(D) small tiny huge

40. What is the size for the following union?

```
Union item
{
    int  m;
    float X;
    Char C;
} code;
```

(A) 8

(B) 7

(C) 5

(D) 4

41. Which of the following is a convert Unix Command ?

(A) Who ¦ ls – l

(B) Who ¦ wc – l

(C) ls – l ¦ Who

(D) Cat example.C ¦ Who

42. Which unit command is used to sort the lines of data in a file in reverse order ?

(A) Sort

(B) Sh

(C) Sort –r

(D) Sh –r

43. _____ is the time for the disk arm to move the heads to the cylinder containing the desired sector.

(A) Seek time

(B) Rotational latency

(C) Response time

(D) Waiting time

44. An optimal scheduling algorithm in terms of minimizing the average waiting time of a given set of processes is

(A) FCFS scheduling algorithm

(B) Round robin scheduling algorithm

(C) Shortest – Job – First scheduling algorithm

(D) Priority scheduling algorithm

45. Jobs which are admitted to the system for processing is done by

(A) Long-term scheduling

(B) Short-term scheduling

(C) Medium-term scheduling

(D) Queuing

46. Which of the following functions is performed by the loader ?

(A) Prepares a symbol table

(B) Performs lexical analysis

(C) Allocates space in memory for the programs and resolve symbolic references between object Checks

(D) Construct intermediate code

47. Which of the following is correct about class and structure ?

(A) Class can have member functions while structure cannot

(B) Class data members are public by default while that of structure are private

(C) Pointer to structure or classes cannot be declared

(D) Class data members are private by default while that of structure are public by default

48. Which of the following is a self-reference structure ?

(A) Array

(B) Integer

(C) Linked list

(D) Float

49. A circular queue is maintained in an array C[0.....n – 1] with front and rear as defined for circular queues then the number of elements in the circular queue is

(A) Rear – front

(B) (Rear – front + n) mod n

(C) Rear – front +1

(D) (Rear – front) mod n

50. The _____ layer changes bits into electromagnetic signals.

(A) Physical

(B) Datalink

(C) Transport

(D) Presentation