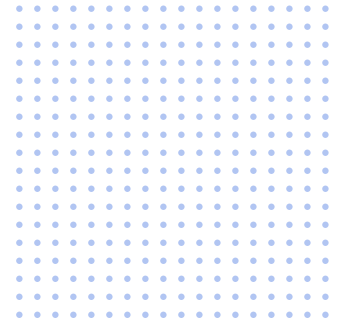




FOR KUET EXAM PREPARATION

KUET 2021 Question Paper - MCA

EXAM	YEAR	TYPE	SUBJECT
KUET	2021	Question Paper	MCA

Sr. No.

ENTRANCE TEST-2021**SCHOOL OF APPLIED SCIENCES & TECHNOLOGY****COMPUTER SCIENCE**

Question Booklet Series

A

Total Questions : 60

Time Allowed : 70 Minutes

Roll No. :

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Instructions for Candidates :

1. Write your Entrance Test Roll Number in the space provided at the top of this page of Question Booklet and fill up the necessary information in the spaces provided on the OMR Answer Sheet.
2. OMR Answer Sheet has an Original Copy and a Candidate's Copy glued beneath it at the top. While making entries in the Original Copy, candidate should ensure that the two copies are aligned properly so that the entries made in the Original Copy against each item are exactly copied in the Candidate's Copy.
3. All entries in the OMR Answer Sheet, including answers to questions, are to be recorded in the Original Copy only.
4. Choose the correct / most appropriate response for each question among the options A, B, C and D and darken the circle of the appropriate response completely. The incomplete darkened circle is not correctly read by the OMR Scanner and no complaint to this effect shall be entertained.
5. Use only blue/black ball point pen to darken the circle of correct/most appropriate response. In no case gel/ink pen or pencil should be used.
6. Do not darken more than one circle of options for any question. A question with more than one darkened response shall be considered wrong.
7. There will be '**Negative Marking**' for wrong answers. Each wrong answer will lead to the deduction of 0.25 marks from the total score of the candidate.
8. Only those candidates who would obtain positive score in Entrance Test Examination shall be eligible for admission.
9. Do not make any stray mark on the OMR sheet.
10. Calculators and mobiles shall not be permitted inside the examination hall.
11. Rough work, if any, should be done on the blank sheets provided with the question booklet.
12. OMR Answer Sheet must be handled carefully and it should not be folded or mutilated in which case it will not be evaluated.
13. Ensure that your OMR Answer Sheet has been signed by the Invigilator and the candidate himself/herself.
14. At the end of the examination, hand over the OMR Answer Sheet to the invigilator who will first tear off the original OMR sheet in presence of the Candidate and hand over the Candidate's Copy to the candidate.

SS-5445-A

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☆**[Turn over**

1. *Have you been* more careful, the accident could have been averted.
 (A) If you have been
 (B) Had you been
 (C) If you could have been
 (D) No correction required
2. The Antonym of the word *Approbate* is :
 (A) Ingratitude
 (B) Dissatisfaction
 (C) Condemn
 (D) Master
3. The verbal analogy of *Liquid : Litre* is :
 (A) Hot : Cold
 (B) Weight : Kilogram
 (C) Movie : Entertainment
 (D) Winter : Cold
4. “ Sustained pressure must be brought to bear to see that pollution _____ Laws are _____ ”
 Select the appropriate set of words that make the sentence more meaningful?
 (A) enforcement, adhered to
 (B) control, adhered to
 (C) effective, complied to
 (D) prohibition, made up
5. Length and width of a field are in the ratio 5 : 3. If the width of the field is 42 m then its length is :
 (A) 100 m
 (B) 80 m
 (C) 50 m
 (D) 70 m
6. A can do a piece of work in 30 days. He works at it for 5 days and then B finishes it in 20 days. In what time can A and B together do it ?
 (A) $16\frac{2}{3}$ days
 (B) $13\frac{1}{3}$ days
 (C) $17\frac{1}{3}$ days
 (D) $16\frac{1}{2}$ days
7. A is the father of X. B is the mother of Y. The sister of X and Z is Y. Which of the following statements is definitely not true ?
 (A) B is the wife of A
 (B) B has one daughter
 (C) Y is the son of A
 (D) X is the sister of Z

8. If $44 \times 44 = 4444$ and $34 \times 52 = 5423$ then $81 \times 46 = ?$
- (A) 1648
(B) 8461
(C) 8164
(D) 4168
9. If a, b, c are real and $a + b + c = 0$ then the quadratic equation, $4ax^2 + 3bx + 2c = 0$ has :
- (A) One positive and one negative root
(B) Imaginary roots
(C) Two real roots
(D) None of these
10. A candidate is required to answer 6 out of 10 questions which are divided into two groups each containing 5 questions. He is not permitted to attempt more than 4 questions from either group. The number of different ways in which the candidate can select the 6 questions is :
- (A) 50
(B) 150
(C) 200
(D) 250
11. The 16th term of an arithmetic sequence 4, 7, 10, _____ is :
- (A) 16
(B) 23
(C) 35
(D) 49
12. Numbers lying between 99 and 1000 that can be formed from the digits 2, 3, 7, 0, 8, 6 are :
- (A) 100
(B) 150
(C) 200
(D) 250
13. A circle passing through $(0, 0)$, $(a, 0)$, $(0, b)$ then the coordinates of the centre are :
- (A) $\left(\frac{a}{2}, \frac{b}{2}\right)$
(B) $\left(\frac{b}{2}, \frac{a}{2}\right)$
(C) (a, b)
(D) (b, a)
14. What is the order of the equation, $xy^3\left(\frac{\partial y}{\partial x}\right)^2 + yx^2 + \frac{\partial y}{\partial x} = 0$ $y\partial x = 0$?
- (A) Third Order
(B) Second Order
(C) First Order
(D) Zero Order
15. If $\cos 5\theta = a \cos \theta + b \cos^3 \theta + c \cos^5 \theta + d$, then :
- (A) $A = 20$
(B) $B = -16$
(C) $C = 16$ and -20
(D) $D = 5$

16. A tower subtends an angle of 30° at a point on the same level as the foot of the tower, and at a second point, "h" metre above the first, the depression of the foot of the tower is 60° . The height of the tower is :
- (A) h metre
(B) 3h metre
(C) $\sqrt{3}$ h metre
(D) None of these
17. The average score of boys in an examination of a school is 71 and that of girls is 73. The average of the school in that examination is 71.8. Find the ratio of the number of boys to the number of girls in the examination.
- (A) 2:3
(B) 1:2
(C) 2:1
(D) 3:2
18. The coefficient of correlation was defined by :
- (A) Laplace
(B) Pascal
(C) De Moivre
(D) Karl Pearson
19. If the mean and variance of a binomial distribution are 2 and $\frac{4}{3}$ respectively, then the value of $p(x = 0)$ is :
- (A) $\frac{1}{8}$
(B) $\frac{64}{729}$
(C) $\frac{1}{729}$
(D) $\frac{8}{729}$
20. In a group of 52 persons, 16 drink tea but not coffee and 33 drink tea, How many drink Coffee but not tea ?
- (A) 3
(B) 7
(C) 17
(D) 19
21. If circular metal sheet is 0.65 cm thick and of 50 cm in diameter is melted and recast into cylindrical bar with 8cm diameter then the length of bar will be :
- (A) 24.41 cm
(B) 35.41 cm
(C) 40.41 cm
(D) 30.41 cm

22. The radius of a hemispherical balloon increases from 6 cm to 12 cm as air is being pumped into it. The ratios of the surface areas of the balloon in the two cases is :
- (A) 1 : 4
(B) 1 : 3
(C) 2 : 3
(D) 2 : 1
23. Let $P = \begin{bmatrix} 1 & 1 & -1 \\ 2 & -3 & 4 \\ 3 & -2 & 3 \end{bmatrix}$ and $Q = \begin{bmatrix} -1 & -2 & -1 \\ 6 & 12 & 6 \\ 5 & 10 & 5 \end{bmatrix}$ be two matrices, then rank of $P + Q$ will be :
- (A) 0
(B) 1
(C) 2
(D) 3
24. The value of $\int_0^{\frac{\pi}{2}} \sin^5 x \cos^3 x \, dx$ is :
- (A) 0.0203
(B) 0.0307
(C) 0.0417
(D) 0.0543
25. ASCII and EBCDIC are the popular character coding systems. What does EBCDIC stand for ?
- (A) Extended Binary Coded Decimal Interchange Code
(B) Extended Bit Code Decimal Interchange Code
(C) Extended Bit Case Decimal Interchange Code
(D) Extended Binary Case Decimal Interchange Code
26. ENIAC uses ____.
- (A) Decimal Numbering System
(B) Octal Numbering System
(C) Binary Numbering System
(D) Hexadecimal Numbering System
27. The term gigabyte refers to :
- (A) 1024 bytes
(B) 1024 kilobytes
(C) 1000 megabytes
(D) 1024 megabytes
28. EPROM can be used for ____.
- (A) Erasing the contents of ROM
(B) Reconstructing the contents of ROM
(C) Erasing and reconstructing the contents of ROM
(D) Duplicating ROM
29. The essential features of a number system are
- (A) Radix
(B) Set of distinct counting digits
(C) Bits
(D) Both (A) and (B)
30. What is the mantissa portion of float number 0.085 when it is stored in 32-bit floating point representation ?
- (A) 3019899
(B) 2019899
(C) 3019898
(D) None

31. The essential content(s) of each entry of a page table are :
- Virtual page number
 - Page frame number
 - Both Virtual page number and Page frame number
 - Access rights information.
32. The contents of a base register are added to the contents of index register in :
- indexed addressing mode
 - based indexed addressing mode
 - relative based indexed addressing mode
 - based indexed and relative based indexed addressing mode
33. The value of "l" after executing the following code fragment will be :
- ```
int i = 5, j, l = 0;
for (i = 1 ; i <= 5 ; i++)
 for (j = 0 ; j <= i ; j++)
 l++;
```
- 25
  - 5
  - 15
  - None of these
34. The statement which makes a while loop to skip statements in the current iteration and goes straight to the while condition checking is :
- Continue
  - Break
  - Skip
  - None of these
35. Which of the following comment is correct when a macro definition includes arguments ?
- The opening parenthesis should immediately follow the macro name.
  - There should be at least one blank between the macro name and the opening parenthesis.
  - There should be only one blank between the macro name and the opening parenthesis.
  - All the above comments are correct.
36. What will be the output of the following program if the input is abcdefg ?
- ```
main()
{
    char x [10], *ptr = x;
    scanf ("%s", x);
    change(&x[4]);
}

change(char a[])
{
    puts(a);
}
```
- abcd
 - abc
 - efg
 - Garbage
37. Which of the following is generally used for performing tasks like creating the structure of the relations, deleting relation?
- DML (Data Manipulation Language)
 - Query
 - Relational Schema
 - DDL (Data Definition Language)

38. Which one of the following refers to the copies of the same data (or information) occupying the memory space at multiple places ?
- (A) Data Repository
(B) Data Inconsistency
(C) Data Mining
(D) Data Redundancy
39. The relation employee(ID,name, street, Credit, street,city, salary) is decomposed into Employee1(ID,name) Employee2(name, street, city, salary) This type of decomposition is called :
- (A) Lossless decomposition
(B) Lossless-join decomposition
(C) Lossy-join decomposition
(D) None of the mentioned
40. Which of the following protocols ensures conflict serializability and safety from deadlocks ?
- (A) Two-phase locking protocol
(B) Time-stamp ordering protocol
(C) Graph based protocol
(D) None of the mentioned
41. What data structure would you mostly likely see in non recursive implementation of a recursive algorithm ?
- (A) Linked List
(B) Stack
(C) Queue
(D) Tree
42. What is the maximum number of children that a binary tree node can have ?
- (A) 0
(B) 1
(C) 2
(D) 3
43. Which of the following ways can be used to represent a graph ?
- (A) Adjacency List and Adjacency Matrix
(B) Incidence Matrix
(C) Adjacency List, Adjacency Matrix as well as Incidence Matrix
(D) No way to represent
44. Which of the following sorting algorithms in its typical implementation gives best performance when applied on an array which is sorted or almost sorted (maximum 1 or two elements are misplaced).
- (A) Insertion Sort
(B) Quick Sort
(C) Merge Sort
(D) Heap Sort
45. In operating system, each process has its own _____.
- (A) address space and global variables
(B) open files
(C) pending alarms, signals and signal handlers
(D) All of the mentioned

46. Which of the following algorithms tends to minimize the process flow time ?
- (A) First come First served
 - (B) Shortest Job First
 - (C) Earliest Deadline First
 - (D) Longest Job First
47. Memory management technique in which system stores and retrieves data from secondary storage for use in main memory is called :
- (A) Fragmentation
 - (B) Paging
 - (C) Mapping
 - (D) None of the mentioned
48. Which of the following condition is required for a deadlock to be possible ?
- (A) Mutual exclusion
 - (B) A process may hold allocated resources while awaiting assignment of other resources
 - (C) No resource can be forcibly removed from a process holding it
 - (D) All of the mentioned
49. The word _____ comes from the name of a Persian mathematician Abu Ja'far Mohammed ibn-i Musa al Khowarizmi.
- (A) Flowchart
 - (B) Flow
 - (C) Algorithm
 - (D) Syntax
50. What is an external sorting algorithm ?
- (A) Algorithm that uses tape or disk during the sort
 - (B) Algorithm that uses main memory during the sort
 - (C) Algorithm that involves swapping
 - (D) Algorithm that are considered 'in place'
51. What is the worst case complexity of bubble sort ?
- (A) $O(n \log n)$
 - (B) $O(\log n)$
 - (C) $O(n)$
 - (D) $O(n^2)$
52. What is the average running time complexity of a quick sort algorithm ?
- (A) $O(n \log n)$
 - (B) $O(\log n)$
 - (C) $O(n)$
 - (D) $O(n^2)$
53. There are _____ tuples in finite state machine.
- (A) 4
 - (B) 5
 - (C) 6
 - (D) Unlimited
54. Regular grammar is :
- (A) Context free grammar
 - (B) Non context free grammar
 - (C) English grammar
 - (D) None of the mentioned

55. Which of the following statement is false ?
- (A) Context free language is the subset of context sensitive language
 - (B) Regular language is the subset of context sensitive language
 - (C) Recursively enumerable language is the super set of regular language
 - (D) Context sensitive language is a subset of context free language
56. Which of the following can accept even palindrome over $\{a, b\}$?
- (A) Push down Automata
 - (B) Turing machine
 - (C) Non Deterministic Finite Automata
 - (D) All of the mentioned
57. What do we call a collection of two or more computers that are located within a limited distance of each other and that are connected to each other directly or indirectly ?
- (A) Internet
 - (B) Intranet
 - (C) Local Area Network
 - (D) Wide Area Network
58. The technique of temporarily delaying outgoing acknowledgements so that they can be hooked onto the next outgoing data frame is called _____.
- (A) Piggybacking
 - (B) Cyclic redundancy check
 - (C) Fletchers checksum
 - (D) Parity check
59. The network layer protocol for internet is _____.
- (A) Ethernet
 - (B) Internet protocol
 - (C) Hypertext transfer protocol
 - (D) File transfer protocol
60. Which of the following are transport layer protocols used in networking ?
- (A) TCP and FTP
 - (B) UDP and HTTP
 - (C) TCP and UDP
 - (D) HTTP and FTP

ROUGH WORK**SS-5445-A****10**
✧

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✳**128**