ENTRANCE EXAM PDF OF

MASTER OF COMPUTER APPL. (M.C.A)

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Question Booklet No. .....

ENTRANCE EXAMINATION – 2021 – 22

SET – C

920215

Roll No. MCW0XXXXXXXXXXXXX

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Signature of Invigilator

Time: 1 Hour 30 Minutes

Total Marks: 100

Instructions to Candidates

1. Do not write your name or put any other mark of identification anywhere in the OMR Response Sheet. IF ANY MARK OF IDENTIFICATIONS IS DISCOVERED ANYWHERE IN OMR RESPONSE SHEET, the OMR sheet will be cancelled, and will not be evaluated.
2. **This Question Booklet contains the cover page and a total of 100 Multiple Choice Questions of 1 mark each.**
3. Space for rough work has been provided at the beginning and end. Available space on each page may also be used for rough work.
4. There is negative marking in Multiple Choice Questions. For each wrong answer, 0.25 marks will be deducted.
5. USE/POSSESSION OF ELECTRONIC GADGETS LIKE MOBILE PHONE, iPhone, iPad, pager ETC. is strictly PROHIBITED.
6. Candidate should check the serial order of questions at the beginning of the test. If any question is found missing in the serial order, it should be immediately brought to the notice of the Invigilator. No pages should be torn out from this question booklet.
7. Answers must be marked in the OMR Response sheet which is provided separately. OMR Response sheet must be handed over to the invigilator before you leave the seat.
8. The OMR Response sheet should not be folded or wrinkled. The folded or wrinkled OMR/Response Sheet will not be evaluated.
9. Write your Roll Number in the appropriate space (above) and on the OMR Response Sheet. Any other details, if asked for, should be written only in the space provided.
10. There are four options to each question marked A, B, C and D. Select one of the most appropriate options and fill up the corresponding oval/circle in the OMR Response Sheet provided to you. The correct procedure for filling up the OMR Response Sheet is mentioned below.

CORRECT METHOD
(A) ● (C) (D)

WRONG METHODS																				
(A) ⊗ (C) (D)				(A) ✓ (C) (D)				(A) ◐ (C) (D)				(A) ◉ (C) (D)				(A) ● (C) ◉				(A) ● (C) ●			

1. A ten-rupee coin is placed on a plain paper. How many coins of the same size can be placed around it so that each one touches the central and adjacent coins?

(a) 4 (b) 7

(c) 3 (d) 6

2. The missing term in the sequence ADVENTURE, DVENTURE, DVENTUR, ...?..... VENTU

(a) DVENT (b) VENTURE

(c) VENTUR (d) DVENTU

3. Choose the ODD ONE OUT:

(a) Rice (b) Maize

(c) jowar (d) Wheat

4. If DRIVER = 12, PEDESTRIAN = 20, ACCIDE NT = 16, then CAR = ?

(a) 3 (b) 6

(c) 8 (d) 10

5. If you are facing north-east and move 10m forward, turn left and move 7.5m, then you are:

(a) North of your initial position

(b) South of your initial position

(c) East of your initial position

(d) West of your initial position

6. A clock is so placed that at 12 noon its minute hand point towards north-east. In which direction does its hour hand point at 1:30 p.m.?

(a) North (b) South

(c) East (d) West

7. A frog tries to come out of a dried well 900m deep with slippery walls. Every time the frog jumps up 60 cm, he slides back 30 cm. How many jumps the frog will have to take to come out of the well?

(a) 29 (b) 30

(c) 25 (d) 26

8. In how many ways a cricketer can hit a century if he hits only fours and sixes?

(a) 24 (b) 12

(c) 9 (d) 8

9. How many times are the hands of a clock at right angles in a day?

(a) 24 (b) 48

(c) 22 (d) 44

10. Find the missing term in the series: 2, 15, 4, 12, 6, 7,....?, ...?

(a) 8, 8 (b) 8, 0

(c) 3, 8 (d) 4, 8

11. A is B's sister, C is B's mother, D is C's father, E is D's mother. Then how is A related to D?

(a) Grandmother (b) Grandmother

(c) Daughter (d) Grand daughter

12. Find the wrong number in the series given below:

5, 18, 34, 54, 79, 110, 158

(a) 34 (b) 54

(c) 18 (d) 158

13. Find the wrong number in the series given below:

5, 6, 14, 45, 184, 920, 5556

(a) 5 (b) 6

(c) 920 (d) 5556

14. Win is related to Competition in the same way as invention is related to:

(a) Product
(b) Discovery
(c) Trial
(d) Laboratory

15. Pointing towards a girl in the picture, Sarita said."She is the mother of Neha whose father is my son". How is Sarita related to the girl in the picture?

(a) Mother
(b) Mother-in-law
(c) Aunt
(d) Sister

16. If 100 cats kill 100 mice in 100 days, then 4 cats would kill 4 mice in how many days?

(a) 1day
(b) 4 days
(c) 40 days
(d) 100 days

17. Two pipes A and B can fill a tank in 12minutes and 16minutes respectively. If both pipes are opened together, then after how much time B should be closed so that the tank gets filled in 9 minutes.

(a) 2 minutes
(b) 4 minutes
(c) 8 minutes
(d) 12 minutes

18. If Mathematics: Logic :: Science : ?

(a) Facts (b) Scientist

(c) Experiment (d) Laboratory

19. Five children take part in a tournament. Each one has to play every other one. How many games must they play?

(a) 8 (b) 10

(c) 24 (d) 30

20. A man has a certain number of small boxes to pack into parcels. If he packs 3, 4, 5 or 6 in a parcel, he is left with one over; if he packs 7 in a parcel none is left over. What is the number of boxes, he may have to pack?

(a) 106 (b) 301

(c) 309 (d) 400

21. Choose the most appropriate options to fill in the blanks as follows.

Every human being, after the first few days of his life, is a product of two factors: on the one hand, there is his..... endowment; and on the other hand, there is the effect of environment, including.....

(a) constitutional; weather (b) Congenital; education

(c) Personal; climate (d) Economic; learning

22. Choose the most appropriate options to fill in the blanks as follows.

The ..... of public awareness about the disease has led to its widespread.....

(a) Dearth, incidence

(b) Paucity, occurrence

(c) Lack, happening

(d) Scarcity, frequency

23. In the question below, a word '**File**' has been used in sentences in four different ways. Choose the option corresponding to the sentence in which the usage of the word is **incorrect or inappropriate**:

File

(a) You will find the paper in the file under the chair.

(b) I need to file an insurance claim.

(c) The cadets were marching in a single file.

(d) When the parade was on, a soldier broke the file.

24. In the following sentence, parts of the sentence are left blank. Beneath each sentence, four different ways of completing the sentence are indicated. Choose the best alternative:

Sentence: Police ..... notorious gangster after relentless chase that ..... for 3 weeks.

(a) Arrest, reigned
(b) nabbed, lasted
(c) Snatched, persist
(d) contempt, endured

25. In the following sentence, parts of the sentence are left blank. Beneath each sentence, four different ways of completing the sentence are indicated. Choose the best alternative:

Sentence: An interview is a good chance to ..... how candidates ..... difficult situations.

(a) Discuss, improved
(b) Assess, addressed
(c) Analyze, tackling
(d) Evaluate, approach

26. In the question below, a word '**Run**' has been used in sentences in four different ways. Choose the option corresponding to the sentence in which the usage of the word is incorrect or inappropriate:

I. I must run fast to catch up with him.

II. Our team scored a goal against the run of play.

III. You can't run over him like that

IV. The newly released book is enjoying a popular run.

(a) I and II only (b) II and IV Only

(c) III only (d) IV Only

27. The word '**Concurrence**' similar in meaning to the following words except:

(a) Agreement (b) Accord

(c) Consensus (d) Harmony

28. Select the word from the choices given below that is most similar in meaning to the word '**SOLITUDE**'.

(a) Musical Composition (b) Aloneness

(c) True statement (d) Single-mindedness

29. Which is the antonym of the word **'EXODUS'**

(a) Influx (b) Return

(c) Home Coming (d) Restoration

30. Choose the alternative from the following options, which can be substituted for the given words/sentence.

'A style in which a writer makes display of his knowledge'

(a) Ornate (b) Pedantic

(c) Artificial (d) Showy

31. The set $(A \cap B')' \cup (B \cap C)$ is equal to

(a) $(A' \cup B \cup C)$ (b) $(A' \cup B)$

(c) $(A' \cup c')$ (d) $(A' \cap B)$

32. Let F_1 be the set of parallelograms, F_2 the set of rectangles, F_3 the set of rhombuses, F_4 the set of squares and F_5 the set of trapeziums in a plane. Then F_1 may be equal to:

(a) $(F_2 \cap F_3)$ (b) $(F_3 \cap F_4)$

(c) $(F_2 \cup F_5)$ (d) $(F_2 \cup F_3 \cup F_4 \cup F_1)$

33. If $[x^2]-5[x]+6=0$, where [.] denote the greatest integer function, then

(a) $x \in [3, 4]$ (b) $x \in (2, 3]$

(c) $x \in (2, 3)$ (d) $x \in (2, 4)$

34. Which of the following is correct?

(a) $\sin 1^\circ > \sin 1$ (b) $\sin 1^\circ < \sin 1$

(c) $\sin 1^\circ = \sin 1$ (d) $\sin 1^\circ = \prod/18^\circ \sin 1$

35. The value of $\tan 3A - \tan 2A - \tan A$ is equal to

(a) $\tan 3A \tan 2A \tan A$

(b) $-\tan 3A \tan 2A \tan A$

(c) $\tan A \tan 2A - \tan 2A \tan 3A - \tan 3A \tan A$

(d) None of these

36. If $\left(\frac{1+i}{1-i}\right)^x = 1$, then

(a) $x = 2n+1$, where $n \in N$

(b) $x = 4n$, where $n \in N$

(c) $x = 2n$, where $n \in N$

(d) $x = 4n+1$, where $n \in N$

37. The complex number z which satisfies the condition $\left|\frac{i+z}{i-z}\right| = 1$ lies on

(a) Circle $x^2+y^2=1$ (b) The x-axis

(c) The y-axis (d) The line $x+y=1$

38. A five-digit number divisible by 3 is to be formed using the numbers 0,1,2,3,4 and 5 without repetitions. The total number of ways this can be done is:

(a) 216 (b) 600

(c) 240 (d) 3125

39. Given 5 different green dyes, 4 different blue dyes and 3 different red dyes, the number of combinations of dyes which can be chosen taking at least 1green and 1blue dye is

(a) 3600 (b) 3720

(c) 3800 (d) 3500

40. The total number of terms in the expansion of $(x+a)^{100}+(x-a)^{100}$ after simplification is

(a) 50 (b) 202

(c) 51 (d) 62

41. The minimum value of $4^x + 4^{1-x}$, $x \in R$, is

(a) 2 (b) 4

(c) 1 (d) 0

42. The coordinates of the foot of perpendiculars from the point (2, 3) on the line $y = 3x + 4$ is given by

(a) $\left(\frac{37}{10}, \frac{-1}{10}\right)$ (b) $\left(\frac{-1}{10}, \frac{37}{10}\right)$

(c) $\left(\frac{10}{37}, -10\right)$ (d) $\left(\frac{2}{3}, \frac{-1}{3}\right)$

43. Equations of diagonals of the square formed by the lines $x = 0$, $y = 0$, $x = 1$ and $y = 1$ are

(a) $y = x, y + x = 1$ (b) $y = x, y + x = 2$

(c) $2y = x, y + x = \frac{1}{3}$ (d) $y = 2x, y + 2x = 1$

44. The equation of a circle with origin as centre and passing through the vertices of an equilateral triangle whose median is of length $3a$ is:

(a) $x^2 + y^2 = 9a^2$ (b) $x^2 + y^2 = 16a^2$

(c) $x^2 + y^2 = 4a^2$ (d) $x^2 + y^2 = a^2$

45. The locus of a point for which $y = 0$, $z = 0$ is:

(a) Equation of X-axis (b) Equation of Y-axis

(c) Equation of Z-axis (d) None

46. In an A.P. the p^{th} term is q and the $(p + q)^{th}$ term is 0. Then the q^{th} term is

(a) -p (b) p

(c) p + q (d) p - q

47. Let $f(x) = x - [x] ; x \in R$. [ ] denotes the greatest integer function, then $\int \left(\frac{1}{2}\right)$ is:

(a) $\frac{3}{2}$ (b) 1

(c) 0 (d) -1

48. The standard deviation of some temperature data in °C is 5. If the data were converted into °F , the variance would be

(a) 81 (b) 57

(c) 36 (d) 25

49. Three numbers are chosen from 1 to 20. Find the probability that they are not consecutive

(a) $\frac{186}{190}$ (b) $\frac{187}{190}$

(c) $\frac{188}{190}$ (d) $\frac{18}{{}^{20}_{3}C}$

50. The probability that at least one of the evens A and B occurs is 0.6. If A and 8 occurs simultaneously with probability 0.2, then, $P(\bar{A}) + P(\bar{B})$ is

(a) 0.4 (b) 0.8

(c) 1.2 (d) 1.6

51. The maximum number of equivalence relations on the set $A = \{1, 2, 3\}$ are

(a) 1 (b) 2

(c) 3 (d) 5

52. If the set A contains 5 elements and the set B contains 6 elements, then the number of one-one and onto mappings from A to B is

(a) 720 (b) 120

(c) 0 (d) none

53. If $\cos^{-1}\alpha + \cos^{-1}\beta + \cos^{-1}\gamma = 3\pi$, then $\alpha((\beta+\gamma) + \beta(\gamma+\alpha) + \gamma(\alpha+\beta)$ equals

(a) 0 (b) 1

(c) 6 (d) 12

54. If A is a square matrix such that $A^2 = I$, then $(A - I)^3 + (A - I)^3 - 7A$ is equal to

(a) A (b) $I - A$

(c) $I + A$ (d) $3A$

55. Let $f(t) = \begin{vmatrix} \cos t & t & 1 \\ 2\sin t & t & 2t \\ \sin t & t & t \end{vmatrix}$, then $\lim_{t\to 0} \frac{f(t)}{t^2}$ is equal to

(a) 0 (b) -1

(c) 2 (d) 3

56. If x, y, z are all different from zero and $\begin{vmatrix} 1+x & 1 & 1 \\ 1 & 1 & 1 \\ 1 & 1 & 1+z \end{vmatrix} = 0$, then value of $x^{-1} + y^{-1} + z^{-1}$ is

(a) xyz (b) $x^{-1}\ y^{-1}\ z^{-1}$

(c) $-x - y - z$ (d) -1

57. If $f(x) = x^2 \sin \frac{1}{x}$, where $x \neq 0$, then the value of the function f at $x=0$, so that the function is continuous at $x = 0$, is

(a) 0 (b) -1

(c) 1 (d) None

58. Maximum value of $\left(\frac{1}{x}\right)^x$ is

(a) e (b) e^e

(c) $e^{\frac{1}{e}}$ (d) $\left(\frac{1}{e}\right)^{\frac{1}{e}}$

59. $\int \frac{\cos 2x - \cos 2\theta}{\cos x - \cos \theta} dx$ equal to:

(a) $2(\sin x + x \cos\theta) + C$

(b) $2(\sin x - x \cos\theta) + C$

(c) $2(\sin x + 2x \cos\theta) + C$

(d) $2(\sin x - 2x \cos\theta) + C$

60. The degree of the differential equation $\left[1 + \left(\frac{dy}{dx}\right)^2\right]^{\frac{3}{2}} = \frac{d^2y}{dx^2}$ is:

(a) 4 (b) $\frac{3}{2}$

(c) Not defined (d) 2

61. The solution of the differential equation $\frac{dy}{dx} = e^{x-y} + x^2 e^{-y}$ is:

(a) $y = e^{x-y} - x^2 e^{-y} + c$

(b) $e^y - e^x = \frac{x^3}{3} + c$

(c) $e^x + e^y = \frac{x^3}{3} + c$

(d) $e^x - e^y = \frac{x^3}{3} + c$

62. For any vector $\vec{a}$, the value of $(\vec{a} \times \hat{i})^2 + (\vec{a} \times \hat{j})^2 + (\vec{a} \times \hat{k})^2$ is equal to

(a) $\vec{a}^2$

(b) $\overrightarrow{3a^2}$

(c) $\overrightarrow{4a^2}$

(d) $2\vec{a}^2$

63. Number of vectors of unit length perpendicular to the vectors $\vec{a} = 2\hat{i} + \hat{j} + 2\hat{k}$ and $b = \hat{j} + \hat{k}$ is.

(a) one

(b) two

(c) three

(d) infinite

64. The reflection of the point (α,β,γ) in the xy-plane is:

(a) $(\alpha,\beta,0)$

(b) $(0,0,\gamma)$

(c) $(-\alpha,-\beta,\gamma)$

(d) $(\alpha,\beta,-\gamma)$

65. The locus represented by $xy + yz=0$ is

(a) A pair of perpendicular lines

(b) A pair of parallel lines

(c) A pair of parallel planes

(d) A pair of perpendicular planes

66. Three persons A, B and C fire at a target in turn, starting with A. Their probabilities of hitting the target are 0.4, 0.3 and 0.2 respectively. The probability of two hits is:

(a) 0.024 (b) 0.188

(c) 0.336 (d) 0.452

67. A and B are two students. Their chances of solving a problem correctly are $\frac{1}{3}$ and $\frac{1}{4}$, respectively. If the probability of their making a common error is $\frac{1}{20}$ and they obtain the same answer, then the probability of their answer to be correct is:

(a) $\frac{1}{12}$ (b) $\frac{1}{40}$

(c) $\frac{13}{120}$ (d) $\frac{10}{13}$

68. If $a_n = \alpha^n - \beta^n$ and α, β are the roots of the equation $x^2 - 6x - 2 = 0$, then find the value of $\frac{a_{10} - 2a_8}{3a_9}$

(a) 2 (b) -2

(c) 3 (d) -3

69. Let the quadratic equation $ax^2 + bx + c = 0$ where a, b, c are obtained by rolling the dice thrice. What is the probability that the equation has equal roots?

(a) $\frac{5}{216}$ (b) $\frac{1}{72}$

(c) $\frac{1}{36}$ (d) $\frac{1}{216}$

70. Find the value of $I = \int_{-1}^{1} x^2 . e^{[x^3]}\, dx$, where ([ ] denotes the greatest integer function)

(a) $\frac{1}{3} - \frac{1}{3e}$ (b) $\frac{1}{3} + \frac{1}{3e}$

(c) $\frac{1}{3e} - \frac{1}{2}$ (d) 2

71. Find the number of points, where $f(x) = |2x + 1| - 3|x + 2| + |x^2 + x - 2|$ is non differentiable at

(a) 2 (b) 3

(c) 4 (d) 0

72. Find the number of solutions of the equation $4(x-1) = \log_2(x-3)$

(a) 0 (b) 1

(c) 2 (d) 4

73. Minimum value of $a^{a^x} + \frac{a}{a^{a^x}}$ $(a > 0; a, x \in R)$

(a) $2\sqrt{a}$ (b) $\sqrt{2}a$

(c) $2\sqrt{2}a$ (d) $2\sqrt{2a}$

74. If 'x' is a number divided by '4', leaves the remainder '3', then find the remainder if $(2020+x)^{2022}$ is divided by '8'

(a) 1 (b) 2

(c) 3 (d) 4

75. If $x^3 - 2x^2 + 2x - 1 = 0$ has roots (α,β,γ) then find $(\alpha^{162} + \beta^{162} + \gamma^{162})$

(a) 1 (b) 2

(c) 3 (d) 4

76. Find the area bounded by the curve $y = \big|\,|x-1|-2\,\big|$ with X-axis

(a) 1 (b) 2

(c) 3 (d) 4

77. If a triangle is inscribed in a circle of radius r, then which of the following triangle can have maximum area:

(a) Equilateral triangle with height $\frac{2r}{3}$

(b) Right angled triangle with side 2r, r

(c) Equilateral triangle with side $\sqrt{3r}$

(d) Isosceles triangle with base 2r

78. From the point A (3, 2), a line is drawn to any point on the circle $x^2 + y^2 = 1$. If locus of midpoint of this line segment is a circle, then its radius is

(a) $\frac{\sqrt{13}}{2}$ (b) $\frac{1}{2}$

(c) $\frac{\sqrt{11}}{2}$ (d) $\frac{1}{4}$

79. If slope of common tangent to curves $4x^2 + 9y^2 = 36$ and $4x^2 + 4y^2 = 31$ is m, then m^2 is equal to:

(a) 3 (b) 6

(c) 9 (d) 5

80. If A and B are matrices of same order, then (AB' -BA') is a

(a) Skew-symmetric matrix

(b) Null matrix

(c) Symmetric matrix

(d) Unit matrix

81. Which of the following statement s best explains a process?

(a) It is a program

(b) It is a program in execution

(c) It is an instance of a program in execution

(d) It is a program that uses system calls

82. Files that store data in the same format as used in the program are called.

(a) Binary files (b) Source file

(c) Text files (d) Core Files

83. Mach List- I and List - II and select correct group of matching.

List - I	List - II
1. DOS	P. Sun Microsystems
2. P4	Q. Microsoft Corporation
3. Java	R. IBM
4. PC	S. Intel Corporation

(a) (1, Q), (2, S), (3, P), (4, R)

(b) (1, Q), (2, R), (3, S), (4, P)

(c) (1, S), (2, P), (3, Q), (4, R)

(d) (1, R), (2, P), (3, m, (4, S)

84. Which of the following languages is case sensitive?

(a) FORTRAN
(b) BASIC
(c) C
(d) None

85. Kernel is:

(a) Considered as the critical part of OS
(b) Th software which monitors the OS
(c) The set of primitive functions upon which rest of the OS functions are built
(d) None

86. If $(123)_5 = (A3)_B$, then the number of possible values of A is:

(a) 4
(b) 1
(c) 3
(d) 2

87. The three main components of a digital computer system are:

(a) Memory, 1/O, DMA
(b) ALU, CPU, Memory
(c) Memory, CPU, 1/O
(d) Control Circuits, ALU, Registers

88. The Boolean expression AB + AB' + A'C + AC is unaffected by the value of the Boolean variable:

(a) A
(b) B
(c) C
(d) none

89. The method of communication in which transmission takes place in both the direction, but only in one direction at a time is called:

(a) Simplex
(b) Four wire circuit
(c) Full duplex
(d) Half duplex

90. The Topology with the highest reliability is:

(a) Bus Topology
(b) Star Topology
(c) Ring Topology
(d) Mesh Topology

91. C is a:

(a) High level language
(b) Low level language
(c) High Level language with some low level features
(d) Low level language with some high level features

92. Match List-I and List-II given below and select the correct answer from the given options.

List - I		List - II
1.	Azim Premji	P. Microsoft
2.	Narayana Murthy	Q. Wipro
3.	Bill Gates	R. Satyam
4.	Ramalinga Raju	S. Infosys

(a) (1, S), (2. 01, (3, P), (4, R)

(b) (1, Q), (2. S), (3, P), (4, R)

(c) (1, P), (2. R), (3, S), (4, Q)

(d) (1, S), (2. P), (3, Q), (4, R)

93. The minimum number of temporary variables needed to swap the contents of two variables is:

(a) 1 (b) 2

(c) 3 (d) 0

94. Binary equivalent of decimal number $(0.4375)_{10}$ is:

(a) $(0.0111)_2$ (b) $(0.101\ 1)_2$

(c) $(0.1100)_2$ (d) $(0.1010)_2$

95. An important aspect in coding is:

(a) Readability

(b) To use as small memory space as possible

(c) Productivity

(d) Brevity

96. C++ was originally developed by

(a) Clocksin and Mellish

(b) Donald E. Knuth

(c) Sir Richard Hadlee

(d) Bjarne Stroustrup

97. Who created the first free e-mail service on the internet:

(a) B.W. Kernighan (b) Bill gates

(c) N. Karmakar (d) Sabeer Bhatia

98. In general, for a computer which of the following represents the memories in increasing order of their capacities?

(a) Register < RAM < Cache < Hard Disk

(b) RAM < Cache < Hard Disk < Register

(c) Register < Cache < RAM < Hard Disk

(d) Cache < RAM < Hard Disk < Register

99. In IPv4, the length of an IP address is.

(a) 16 bits
(b) 32 bits
(c) 48 bits
(d) 64 bits

100. Which Protocol is used to send messages from a mail client to a mail server?

(a) FTP
(b) IP
(c) SMTP
(d) TCP/IP