Paper Code No- **DM54/4**

Question Booklet No: 654114

ENTRANCE EXAMINATION-2017

MASTER OF COMPUTER APPLICATION (M.C.A) (5 M I)

SET D

ROLL NO. | M | 5 | 4 | 1 | 1 | 5 | 9 | 6 | |

Anwar

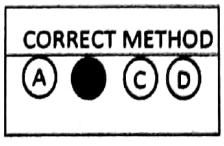
Signature of Invigilator

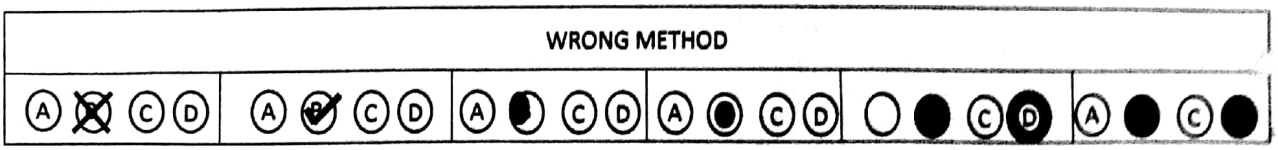
Time: 3 Hours

Total Marks: 100

Instructions to Candidates

1. Do not write your name or put any other mark of identification anywhere in the OMR Answer Sheet. **IF ANY MARK OF IDENTIFICATIONS IS DISCOVERED ANYWHERE IN OMR ANSWER SHEET, the OMR sheet will be cancelled, and will not be evaluated.**
2. This Question Booklet contains this cover page and a total of **100 Multiple Choice Questions of 1mark.** Space for rough work has been provided at the beginning and end. Available space on each page may also be used for rough work.
3. Each correct answer carries one mark.
4. There is negative marking for Multiple Choice Questions. For each wrong answer, 0.25 marks will be deducted.
5. USE OF CALCULATOR IS NOT PERMITTED.
6. USE/POSSESSION OF ELECTRONIC GADGETS LIKE MOBILE PHONE, iPhone, iPad, pager ETC. is not permitted.
7. 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.
8. Answers must be marked in the OMR answer sheet which is provided separately. OMR answer sheet must be handed over to the invigilator before you leave the seat.
9. The OMR answer sheet should not be folded or wrinkled. The folded or wrinkled OMR/Answer Sheet will not be evaluated.
10. Write your Roll Number in the appropriate space (above) and on the OMR Answer Sheet. Any other details, if asked for, should be written only in the space provided.
11. There are four alternative answers to each question marked A, B, C and D. Select one of the answers you consider most appropriate and fill up the corresponding oval/circle in the OMR Answer Sheet provided to you. The correct procedure for filling up the OMR Answer Sheet is mentioned below.
12. Use Black or Blue Ball Pen only for filling the ovals/circles in OMR Answer Sheet while answering the Questions. For your Choice of answers darken the correct oval/circle completely. If the correct answer is 'B', the corresponding oval/circle should be completely fill and darkened as shown below.





1. If 20^{th} term of an A.P. is 30 and its 30^{th} term is 20, then its 10^{th} term is .....

(A) 40 (B) 10

(C) 20 (D) 30

2. Let sum of n terms of an A.P. is 2n(n-1), then sum of their squares is .....

(A) $\frac{8n(n-1)(2n-1)}{3}$ (B) $\frac{8n(n-1)(2n-1)}{6}$

(C) $\frac{n(n+1)(2n+1)}{6}$ (D) $\frac{8n(n+1)(2n+1)}{3}$

3. For what value of x, the $\log_2(5\cdot 2^x+1)$, $\log_4(2^{1-x}+1)$, and 1 are in A.P.?

(A) $\log_2 5$ (B) $\log_5 2$

(C) $1+\log_2 5$ (D) $1-\log_2 5$

4. If the ratio of sum of m terms and n terms of an A.P. be $m^2:n^2$, then the ration of its m^{th} and n^{th} terms will be .....

(A) m:n (B) 2m-1:2n-1

(C) m+n:n+1 (D) n:m

5. The value of $9^{1/3}\times 9^{1/9}\times 9^{1/27}\times\cdots\cdots\infty$ is .....

(A) 3 (B) 9

(C) 1 (D) ∞

6. If α and β are the roots of equation $x^2+px+p^2+q=0$, then the value of $\alpha^2+\alpha\beta+\beta^2$ .....

(A) p (B) -p

(C) q (D) -q

7. If the roots of $x^2-bx+c=0$ are two consecutive numbers, then b^2-4c is equal to .....

(A) 1 (B) 2

(C) 3 (D) 4

8. The number of real roots of equation $(x-1)^2+(x-2)^2+(x-3)^2=0$ is .....

(A) 0 (B) 1

(C) 2 (D) 3

9. If the roots of equation $(b-c)x^2+(c-a)x+(a-b)=0$ be equals, then a, b, c are in .....

(A) H.P. (B) G.P.

(C) A.P. (D) None of these

10. If the equations $x^2+2x+3\lambda=0$ and $2x^2+3x+5\lambda=0$ have a non-zero common root, then λ is equal to.....

(A) 1 (B) -1

(C) 2 (D) -2

11. If ${}^nP_r = {}^nP_{r+1}$ and ${}^nC_r = {}^nC_{r-1}$, then (n, r) is .....

(A) (2, 3) (B) (3, 2)

(C) (4, 3) (D) (3, 4)

12. The number of arrangements of the letters of the word BANANA in which the two N's do not appear adjacently is .....

(A) 40 (B) 60

(C) 80 (D) 100

13. The sum of (n+1) terms of the series $\frac{C_0}{2}-\frac{C_1}{3}+\frac{C_2}{4}-\frac{C_3}{5}+\cdots$ is .....

(A) $\frac{1}{n+1}$ (B) $\frac{1}{n+2}$

(C) $\frac{1}{n(n+1)}$ (D) $\frac{1}{(n+1)(n+2)}$

14. If ω is a cube root of unity, then $\begin{vmatrix} 1 & \omega & \omega^2 \\ 1 & \omega^2 & 1 \\ \omega & 1 & \omega^2 \end{vmatrix}$ is equal to .....

(A) ω (B) ω^2

(C) 1 (D) -3

15. If $A=\begin{bmatrix} x & 2 \\ 2 & x \end{bmatrix}$ and $|A^2|=0$, then x is equal to .....

(A) ±2 (B) ±3

(C) 1 (D) 4

16. Let $\vec{A}=i-j+k, \vec{C}=-i-j$ be two vectors. Which of the following is the vector $\vec{B}$ such that $\vec{A}\times\vec{B}=\vec{C}$ and $\vec{A}\cdot\vec{B}=1$?

(A) i (B) k

(C) $-j$ (D) $i+j$

17. A point P on y-axis is equidistant from the points A(-5, 4) and B(3, -2). Its coordinate is .....

(A) (0, 3/4) (B) (0, 4/3)

(C) (0, 3/7) (D) (0, 7/3)

18. The area of the triangle with vertices A(a, b+c), B(b, c+a), C(c, a+b) is equal to .....

(A) 0 (B) ab+bc+ca

(C) a+b+c (D) a+b-c

19. Two dices are thrown simultaneously. The probability of obtaining a total score of 5 is .....

(A) 1/12 (B) 1/36

(C) 1/9 (D) 1/8

20. Three of the six vertices of a regular hexagon are chosen at random. The probability that triangle formed with these chosen vertices is equilateral, equal to .....

(A) 1/2 (B) 1/10

(C) 1/5 (D) 1/20

21. Let A and B are two disjoint subsets of a universal set E. The $(A \cup B) \cap B'$ is equal to .....

(A) E (B) ϕ

(C) A (D) B

22. (A – B) – A is equal to .....

(A) ϕ (B) A

(C) B (D) $A \cap B$

23. Let 10 is the cardinality of set A. The number of bijective mapping from set A to itself is .....

(A) 10 (B) 55

(C) 100 (D) 3628800

24. Let n be a positive decimal integer. The number of digits in n is equal to .....

(A) $\lceil \log_{10} n \rceil + 1$ (B) $\lfloor \log_{10} n \rfloor + 1$

(C) $\lfloor \log_{10} n \rfloor$ (D) $\lceil \log_{10} n \rceil$

25. Let cardinality of set A and B are 2 and 5 respectively. The number of relations from A to B is .....

(A) 1024 (B) 1000

(C) 1010 (D) 1025

26. Let f:R→R, g:R→R be two functions given by f(x)=2x-3 and g(x)=x/2. The $(fog)^{-1}(x)$ is equal to .....

(A) (x+3)/2 (B) x+3

(C) 2x+3 (D) 2x-4

27. Let f:R→R is defined by $f(x)=x^2+5$, then value of $f^{-1}(4)$ is equal to .....

(A) +1 (B) -1

(C) ϕ (D) 20

28. If g:R→R is defined by $g(x)=x^2-2$, then value of $g^{-1}(23)$ is equal to .....

(A) ±5 (B) 25

(C) ±4 (D) 527

29. Let cardinality of A and B are 3 and 10 respectively. The number of one to one functions from A to B is.....

(A) 2^{10} (B) 2^2

(C) 101 (D) 720

30. Let A={1, 2, 3, 4} and B={a, b} are two sets. The number of surjective mappings from A to B is .....

(A) 14 (B) 16

(C) 2^8 (D) 8!

31. Let $z = \sqrt{3} + i$ be a complex number and $\bar{z}$ be its conjugate. The $|\arg z| + |\arg \bar{z}|$ is equal to ....

(A) $\frac{\pi}{3}$ (B) $\frac{2\pi}{3}$

(C) $\frac{\pi}{6}$ (D) $\frac{\pi}{4}$

32. The $\frac{(\sqrt{3}+i)^{17}}{(1-i)^{50}}$ is equal to.....

(A) $\frac{-1-\sqrt{3}i}{2^9}$ (B) $\frac{1+\sqrt{3}i}{2^9}$

(C) $\frac{-1-\sqrt{3}i}{2^8}$ (D) $\frac{1+\sqrt{3}i}{2^8}$

33. For which of the following value of x, the $\left(\frac{1+i}{1-i}\right)^x = 1$?

(A) 29 (B) 35

(C) 34 (D) 68

34. If ω is a cube root of unity, then the value of $(1 - \omega - \omega^2)(1 + \omega^3)$ is .....

(A) 2 (B) 4

(C) ω (D) ω^2

35. Let z be a complex number. Which of the following is a solution of $|z| - z = 1 + 2i$?

(A) $\frac{3}{2}+2i$ (B) $2-\frac{3}{2}i$

(C) $\frac{3}{2}-2i$ (D) $2+\frac{3}{2}i$

36. If $\sin\theta + \text{cosec}\theta = 2$, then $\sin^n\theta + \text{cosec}^n\theta$ is equal to .....

(A) 1 (B) 2

(C) 2^n (D) 2^n-1

37. The value of $\sin^6 x + \cos^6 x + 3\sin^2 x \cos^2 x$ is equal to .....

(A) 3 (B) 2

(C) 1 (D) 0

38. If $x = a\cos^2\theta\sin\theta$ and $y = a\sin^2\theta\cos\theta$, then $(x^2+y^2)^3$ is equal to .....

(A) a^2x^2 (B) $a^2x^2y^2$

(C) $a^2(y^2-x^2)$ (D) $a^2(x^2-y^2)$

39. The minimum value of $3\cos\theta + 4\sin\theta + 10$ is equal to .....

(A) 5 (B) 9

(C) 7 (D) 3

40. $\sin 6^0 \sin 42^0 \sin 66^0 \sin 78^0$ is equal to .....

(A) 1/32 (B) 1/16

(C) 1/8 (D) 1/4

41. If $y = \tan^{-1}\left\{\frac{1+x}{1-x}\right\}$, then $\frac{dy}{dx}$ is equal to .....

(A) $\frac{2}{1+x^2}$ (B) $\frac{2}{1+2x^2}$

(C) $\frac{1-x^2}{1+x^2}$ (D) $\frac{1}{1+x^2}$

42. If y=log(tan x), then dy/dx is equal to .....

(A) 2cosec 2x (B) 2sec 2x

(C) 2sin 2x (D) 2cos 2x

43. If $y = \cos^{-1} x$ and $z = \sin^{-1}\sqrt{1-x^2}$, then $\frac{dy}{dz}$ is equal to .....

(A) $1/(1-x^2)$ (B) 1

(C) $x/(1+x^2)$ (D) $x/(1-x^2)$

44. If $y = e^{2x}$, then $\frac{d^2y}{dx^2} \cdot \frac{d^2x}{dy^2}$ is equal to .....

(A) $-2e^{x}$ (B) $-2e^{2x}$

(C) $-2e^{-2x}$ (D) $-2e^{-x}$

45. If $\sqrt{x+y} + \sqrt{y-x} = \sqrt{2}$, then $\frac{d^2y}{dx^2}$ is equal to .....

(A) 1 (B) 2

(C) 1/2 (D) -2

46. $\lim_{x\to 0} \frac{1-\cos x}{x^2}$ is equal to .....

(A) 0 (B) 1/2

(C) 1/4 (D) 1

47. $\lim_{x\to\infty}\left(x - \sqrt{x^2+x}\right)$ is equal to.....

(A) 1/2 (B) 1

(C) -1 (D) -1/2

48. $\int \frac{dx}{x\log x \log(\log x)}$ is equal to .....

(A) log x (B) log(log x)

(C) log(log(log x)) (D) $(\log(\log x))^2$

49. $\int x^x (1+\log x)dx$ is equal to .....

(A) x^x (B) $x^x \log x$

(C) $x^x / \log x$ (D) $x^x / (1+x)$

50. $\int_0^1 \frac{x}{(1-x)^{3/4}} dx$ is equal to .....

(A) 12/5 (B) -12/5

(C) 16/5 (D) -16/5

51. z/OS is a .....

(A) PC operating system (B) Mainframe operating system

(C) Mobile operating system (D) None of these

52. Which of the following is a mobile operating system?

(A) Palm operating system (B) AVG

(C) BeOS (D) None of these

53. Intel 8086 is a .....bit microprocessor.

(A) 4 (B) 8

(C) 16 (D) 32

54. Which of the following is mainframe computer?

(A) Vtech (B) Rabbit

(C) Dubna (D) IBM System/360

55. Wellwer is a .....

(A) Operating System (B) Microprocessor

(C) Mobile company (D) None of these

56. If $(500)_{10}=(x)_5$, then x is equal to .....

(A) 400 (B) 4000

(C) 1000 (D) None of these

57. If $(780)_{10}=(1056)_x$, then x is equal to .....

(A) 7 (B) 5

(C) 8 (D) 9

58. If $(2?1)_7 = (120)_{10}$, then the missing digit is

(A) 1 (B) 2

(C) 3 (D) 4

59. The 2's complement of the binary number $(0110100)_2$ is .....

(A) 1001100 (B) 1101100

(C) 1111100 (D) 1101011

60. The 2's complement 10110010 represent the negative number in 8 bits system .....

(A) -50 (B) -78

(C) -77 (D) -51

61. Minimum number of two-input NAND gates used to perform the function of two-input OR gate is ...

(A) One (B) Two

(C) Three (D) Four

62.	The time required for an electronic circuit to change its state is called ..... (A) Propagation time (B) Rise time (C) Decay time (D) Changing time
63.	Which of the following is not equivalent to x? (A) x.x (B) x+x (C) x.1 (D) x+1
64.	Which of the following is a sequential circuit? (A) Adder (B) Decoder (C) Multiplexor (D) Flip flop
65.	Which of the following will be the number of output lines in a combinational circuit that takes input a two bit number and produce the output cube of it? (A) 3 (B) 4 (C) 5 (D) 6
66.	Which of the following is a web browser? (A) Avira (B) TrustPort (C) Opera (D) None of these
67.	Which of the following is an operating system? (A) Baidu (B) Symbian (C) AVG (D) None of these
68.	Which of the following is antivirus software? (A) Symbian (B) Norton (C) SCO (D) None of these
69.	Which of the following is a web search engine? (A) Opera (B) Symbian (C) AVG (D) None of these
70.	Which of the following is a social media website? (A) Instagram (B) Norton (C) Symbian (D) None of these
71.	123:9 :: 321:? (A) 5 (B) 9 (C) 8 (D) 6
72.	Which of the following is code for CAT in a coding scheme in which JMI is coded as 32? (A) 21 (B) 24 (C) 23 (D) 22
73.	Which of the following is code for JMI in a coding scheme in which BAG is coded as 217? (A) 10139 (B) 9128 (C) 10138 (D) 10129

74. If CAT mean 3, HE mean 2, DELHI mean 5, then SAD is .....

(A) 1 (B) 2

(C) 3 (D) 4

75. If 54+43=2, 60+51=10, 70+61=12, then 72+62=?

(A) 14 (B) 13

(C) 8 (D) 9

76. Which of the following is next number in the series 1, 3, 6, 11, 18, 29, ...?

(A) 39 (B) 40

(C) 41 (D) None of these

77. Which of the following is next number in the series 1, 8, 27, 64, 125, ...?

(A) 216 (B) 215

(C) 210 (D) None of these

78. Which of the following is next number in the series 3, 7, 13, 21, 31, ...?

(A) 41 (B) 43

(C) 47 (D) None of these

79. Which of the following is next number in the series 1, 2, 6, 42, ...?

(A) 57 (B) 1805

(C) 1806 (D) None of these

80. Which of the following term is wrong in the series 1, 1, 2, 4, 5, 8, 13?

(A) 2nd (B) 4th

(C) 5th (D) 3rd

81. Which of the following term is wrong in the series 2, 5, 8, 12, 14, 17, 20?

(A) 1st (B) 2nd

(C) 3rd (D) 4th

82. Which of the following term is wrong in the series 1, 4, 9, 16, 21, 36, 49?

(A) 6th (B) 5th

(C) 4th (D) 3rd

83. Which of the following term is wrong in the series 1, 3, 6, 11, 15, 21, 28?

(A) 1st (B) 2nd

(C) 3rd (D) 4th

84. Which of the following is the next term of the series: A_1B, BD_2, D_3G, GK_4, ...?

(A) K_5M (B) K_5P

(C) K_5O (D) K_5Q

85. Which of the following is the next term of the series: C_1Z, D_3Y, E_5X, F_7W, ...?

(A) G_8V (B) $G_{10}V$

(C) G_9W (D) None of these

86.	Which of the following is the next term of the series: ABZ, BDY, DFX, GHW, ...? (A) KJV (B) KIV (C) JJV (D) JIV
87.	Which of the following is the next term of the series: CAT, EBS, GCR, IDQ, ...? (A) KFP (B) KEQ (C) KEP (D) LEP
88.	If '234' is coded to '11', then '123' is coded to ... (A) 6 (B) 5 (C) 7 (D) 8
89.	If '123456' is coded to '615', then '214652' is coded to ... (A) 816 (B) 2134 (C) 613 (D) 713
90.	234:24 :: 235:? (A) 9 (B) 56 (C) 210 (D) 30
91.	Which of the following word is most nearly the opposite in meaning as the word ABSTAIN? (A) Refrain (B) Desist (C) Hoard (D) Begin
92.	Which of the following word is most nearly the opposite in meaning as the word MITIGATE? (A) Aggravate (B) Reduce (C) Weaken (D) Ease
93.	Which of the following word is most nearly the opposite in meaning as the word AMBIGUOUS? (A) Opaque (B) Clear (C) Obscure (D) Vague
94.	There are ..... views on the issue of giving bonus to the employees. (A) independent (B) divergent (C) modest (D) adverse
95.	Before the..... of the Europeans in India, India was a free country. (A) entry (B) emigration (C) advent (D) immigration
96.	Which of the following is correctly spelt English word? (A) Delineate (B) Deleneat (C) Dileneate (D) Deleneate

97.	Which of the following is correctly spelt English word?	
	(A) Enemyty	(B) Enemity
	(C) Enmity	(D) Enmety
98.	Which of the following word is most nearly the same in meaning as the word AMAZING?	
	(A) Beautiful	(B) Good
	(C) Astonishing	(D) Famous
99.	Which of the following word is most nearly the same in meaning as the word BRAVE?	
	(A) Courageous	(B) Serene
	(C) Aloof	(D) Sob
100.	Which of the following word is most nearly the same in meaning as the word DILIGENT?	
	(A) Fool	(B) Unhappy
	(C) Hardworking	(D) Cool