MCA

Previous Year Paper

MP COMBINED 2008

1. ..... dose not belong to C.U. P
(a) Control Unit (b) P.C.U (c) Memory (d) A.L.U

2. Processing capacity of CPU is measured in :
(a) M.I.P.S (b) nano seconds (c) RAM (d) Numbers

3. .....is not an input device.
(a) Key-board (b) Mouse (c) Monitor (d) Microphone

4. In computers ..... form is used to store data.
(a) Binary (b) A.L.U (c) RAM (d) Numbers

5. 12.125 converts to binary as :
(a) 1100.010 (b) 1100.001 (c) 1110.001 (d) 1110.001

6. In decimal system the binary number 10110 is equal to.
(a) 23 (b) 20 (c) 22 (d) 21

7. The octal numbers 657 is equal to binary number :
(a) 110101111 (b) 111 101 110 (c) 110 110 101 (d) 110 110 110

8. The octal number 456 in decimal system is equal to:
(a) 294 (b) 296 (c) 300 (d) 302

9. All the physical parts of computer are called :
(a) Software (b) Hardware (c) Freeware (d) Shareware

10. CD-ROM is a:
(a) Magnetic ROM (b) Optical ROM (c) Erasable ROM (d) none

11. The memory, which is programmed at the time of manufacturing of a computer, is:
(a) PROM (b) RAM (c) ROM (d) none

12. In the computer, Arithmetic and logical operations are performed by:
(a) ALU (b) RAM (c) ROM (d) none

13. If ${}^nC_1 + {}^nC_2 + {}^nC_3 + \ldots + {}^nC_n = 255$ then n equals:
(a) 10 (b) 8 (c) 6 (d) 4

14. If 45 is divided in two parts such that the sum of three times the first part and five times the second part is 161, then the two parts are respectively:
(a) 32, 13 (b) 13, 32 (c) 23, 22 (d) 22, 23

15. In series 36, 27, 19, 12, 6 ... the next number is

(a) 0 (b) 1 (c) 2 (d) 3

16. On subtracting greatest number of four digits from the smallest number of six digits the number obtained is:

(a) 1 (b) 9901 (c) 90001 (d) 99901

17. In series 99, 98, 94, 85, ... 44, 8 the vacant space will have:

(a) 69 (b) 72 (c) 56 (d) 49

18. If the sum of 6 consecutive integers is 51, then the number of prime number in these integers is :

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

19. In the letter series:
QT, BE, KN,?,HK
at the place of '?' there will be :

(a) LP (b) FG (c) WZ (d) HI

20. In a code language SCRIPT is written as TCQIQT then in the same code GARDEN will be written as:

(a) HASEEN (b) HAQEEN (c) HASDFN (d) HAQDFN

21. Which of the following is in descending order ?

(a) $\frac{5}{9}, \frac{4}{5}, \frac{3}{7}, \frac{2}{3}$ (b) $\frac{4}{5}, \frac{2}{3}, \frac{5}{9}, \frac{3}{7}$ (c) $\frac{2}{3}, \frac{3}{7}, \frac{4}{5}, \frac{5}{9}$ (d) $\frac{5}{9}, \frac{3}{7}, \frac{2}{3}, \frac{4}{5}$

22. If there is a certain relationship between first two of the following and a similar relationship is between later two, then at the fourth place (?) there will be:

(a) Airforce (b) Terrtorial army (c) Navy (d) Border Security Force

23. Introducing the accompanying girl Kamal said, "She is the daughter of my grand father's only son." Kamal is related to the girl as:

(a) Father (b) Brother (c) Uncle (d) Cousin

24. In series 1, 1, 4, 8, 9, 27, 16,... the next number is

(a) 52 (b) 56 (c) 60 (d) 64

25. Going 50 metres to South of his house, Ramesh turns left and goes another 20 metres. Then turning North, he goes 30 metres and then states towards his house. In which direction he is going now ?

(a) North (b) North-west (c) East (d) South-East

26. In the above X =

5		8		X	
11	2	9	1	46	5

(a) 6 (b) 7 (c) 8 (d) 9

27. Which of the following words is different from other words of a group ?

(a) Geometry (b) Algebra (c) Mathematics (d) Trigonometry

28. If the time in a clock is 30 minutes past 8 then the angle between the two hands will be:

(a) 80° (b) 75° (c) 70° (d) 60°

29. In the expansion of 3^{100} the digit at unit place is:

(a) 1 (b) 3 (c) 7 (d) 9

30. In the above diagram X =

(a) 5 (b) 6 (c) 7 (d) 8

31. In the series:
$12, 12\frac{1}{4}, 12\frac{3}{4}, 13\frac{1}{2}$,... the next number is:

(a) $13\frac{3}{4}$ (b) $14\frac{1}{4}$ (c) $14\frac{1}{2}$ (d) $14\frac{3}{4}$

32. In the following word pairs one pair is different from others, that is:

(a) Capital-wealth (b) Milk-Curd (c) Brightness-Light (d) Poor- Penniless

33. Among five friends, Sachin, Kunal, Mohit, Anuj and Rohit, Sachin is shorter than Kunal nut taller than Rohit. Mohit is tallest. Anuj is little shorter than Kunla but a little taller than Sachin. The shortest among them, is:

(a) Rohit (b) Sachin (c) Kunal (d) Anuj

34. In the following, what is different from others ?

(a) Sitar (b) Violin (c) Sarangi (d) Harmonium

35. On the basis of results of annual examinations, Rajan ranks 27th in the class, Ishwar is 7 ranks ahead of Rajan. Ishwar's rank from the last is 36th. The number of students in the class is:

(a) 63 (b) 56 (c) 55 (d) 60

36. In a code language GRAPE is written as 27354 and FOUR is written as 1687. In this code language GROUP will be written as:

(a) 27384 (b) 27385 (c) 27684 (d) 27685

37. The values of x and y satisfying the equations:
$\frac{x}{3}-\frac{2}{y}=1$ and $\frac{x}{4}+\frac{3}{y}=3$ are.

(a) $x=9, y=1$ (b) $x=6, y=1$ (c) $x=6, y=2$ (d) $x=3, y=2$

38. In the expansion of $(1+x+x^2)^{-3}$ the coefficient of x^6 will be:

(a) 9 (b) 3 (c) 1 (d) -3

39. If $(1+x)^n = C_0 + C_1 x + C_2 x^2 + \ldots + C_n x^n$ then $C_0C_1 + C_1C_2 + C_2C_3 + \ldots + C_{n-1}C_n$ will be equal to:

(a) $\frac{2n!}{(n+1)(n-1)!}$ (b) $\frac{2!n}{(n^2-1)!}$ (c) $\frac{2n!}{(n^2-1)!}$ (d) $\frac{2!n}{(n+1)!\,(n-1)!}$

40. In the expansion of $\left(x+\frac{1}{x^2}\right)^{3n}$, the term independent of x will be

(a) $\frac{3n!}{n!2n!}$ (b) $\frac{3!n}{n!2n!}$ (c) $\frac{3n!}{2(n!)^2}$ (d) $\frac{3\ n!}{2!2n}$

41. The sum of the series
$\log_e 5-\frac{\log_e(25)}{2^2}+\frac{\log_e(125)}{3^2}+\frac{\log_e(625)}{4^2}+\ldots$ is infinity is:

(a) $\log_e 2$ (b) $\log_e 5$ (c) $\frac{\log_e 5}{\log_e 2}$ (d) $(\log_e 5)\quad(\log_e 2)$

42. Coefficient of x^5 in the expansion of $\frac{(1-4x-x^2)}{e^x}$ is:

(a) $\frac{1}{120}$ (b) $\frac{1}{60}$ (c) $-\frac{1}{120}$ (d) $-\frac{1}{60}$

43. Value of the series:
$\log_e 2+\frac{(\log_e 2)^2}{2!}+\frac{(\log_e 2)^3}{3!}+\frac{(\log_e 2)^4}{4!}+\ldots$ to infinity is:

(a) 2 (b) 1 (c) e^2 (d) e

44. The value of the series : $\frac{1}{2}+\frac{1}{2.2^2}+\frac{1}{3.2^3}+\frac{1}{4.2^4}+\ldots$ to infinity is:

(a) $\log_e 2$ (b) $\log_e \frac{1}{2}$ (c) $1+\log_e 2$ (d) $1-\log_e 2$

45. The value of the determinant: $\begin{vmatrix} a & b & c \\ b & c & a \\ c & a & b \end{vmatrix}$ will be negative when :

(a) a, b, c are positive (b) a, b, c are negative (c) $(a+b+c)<0$ (d) $(a+b+c)>0$

46. The value of the determinant:

$$\begin{vmatrix} b-a & a & a+b \\ c-a & b & b+c \\ a-b & c & c+a \end{vmatrix}$$ is

(a) $(a+b+c)$ (b) $(a+b+c)^3$

(c) $a^2+b^2+c^2-ab-bc-ca$ (d) $a^3+b^2+c^3-3abc$

47. The value of the determinant:

$$\begin{vmatrix} 1 & a & b+c \\ 1 & b & c+a \\ 1 & c & a+b \end{vmatrix}$$ is

(a) 0 (b) 1 (c) $(a+b+c)$ (d) $(1+a+b+c)$

48. If one root of the equation:

$$\begin{vmatrix} x & 3 & 7 \\ 2 & x & 2 \\ 7 & 6 & 2 \end{vmatrix} = 0$$ is (–9), then other roots are:

(a) –2,–7 (b) 2, 7 (c) –2, 7 (d) 2, –7

49. If $\begin{vmatrix} 5 & 4 \\ 1 & 1 \end{vmatrix} \cdot \begin{vmatrix} a & -14 \\ b & 17 \end{vmatrix} = \begin{vmatrix} 1 & -2 \\ 1 & 3 \end{vmatrix}$ then a and b will be equal to:

(a) $a=\frac{1}{5}b=1$ (b) $a=-3, b=4$ (c) $a=1, b=1$ (d) $a=4, b=-3$

50. If $A=\begin{bmatrix} 2 & 0 & 0 \\ 0 & 2 & 0 \\ 0 & 0 & 2 \end{bmatrix}$ and $B=\begin{bmatrix} 1 & 2 & 3 \\ 0 & 1 & 3 \\ 0 & 0 & 2 \end{bmatrix}$ then the value of $|AB|$ will be

(a) 4 (b) 8 (c) 16 (d) 32

51. If $M=\begin{bmatrix} 1 & 4 & 5 \\ 0 & 2 & 6 \\ 5 & 6 & 3 \end{bmatrix}$ then its inverse matrix m^{-1} will be:

(a) $\begin{bmatrix} 1 & 4 & 5 \\ 0 & 2 & 6 \\ 0 & 0 & 3 \end{bmatrix}$ (b) $\begin{bmatrix} 6 & 0 & 0 \\ -12 & 3 & 0 \\ 14 & -6 & 2 \end{bmatrix}$ (c) $\begin{bmatrix} 1 & 0 & 0 \\ -2 & \frac{1}{2} & 0 \\ \frac{7}{3} & -1 & \frac{1}{3} \end{bmatrix}$ (d) $\begin{bmatrix} 1 & -2 & \frac{7}{3} \\ 0 & \frac{1}{2} & -1 \\ 0 & 0 & \frac{1}{3} \end{bmatrix}$

52. The equation of the circle whose two diameters are $2x-3y+12=0$ and $x+4y-5=0$ and the area of which is 154 sq. units, will be: $\left(\pi=\frac{22}{7}\right)$

(a) $x^2+y^2+6x-4y+36=0$ (b) $x^2+y^2 3x-2y+18=0$

(c) $x^2+y^2-6x+4y+36=0$ (d) $x^2+y^2+6x-4y-36=0$

53. The circle $x^2+y^2-2x+2y+1=0$ touches

(a) Only x-axis (b) Only y-axis (c) Both the axes (d) None of the axes

54. If the line $hx+ky=1$ touches the circle $(x^2+y^2)=\frac{1}{a^2}$, then the locus of the point (h,k) will be:

(a) $x^2+y^2=a^2$ (b) $x^2+y^2=2a^2$ (c) $x^2+y^2=1$ (d) $x^2+y^2=\frac{a^2}{2}$

55. Equation of the circle concentric to the circle $x^2 + y^2 - x + 2y + 7 = 0$ and passing through (-1, -2) will be:

(a) $x^2 + y^2 + x + 2y = 0$ (b) $x^2 + y^2 - x + 2y + 2 = 0$

(c) $2(x^2 + y^2) - x + 2y = 0$ (d) $x^2 + y^2 - x + 2y - 2 = 0$

56. For the circle $x^2 + y^2 - 4x + 2y + 6 = 0$, the equation of the diameter passing through the origin is:

(a) $x - 2y = 0$ (b) $x + 2y = 0$ (c) $2x - y = 0$ (d) $2x + y = 0$

57. The circle $x^2 + y^2 + 2ax - a^2 = 0$:

(a) touches x-axis (b) touches y-axis (c) touches both the axes (d) intersects both the axes

58. The circles $x^2 + y^2 + 2g_1x + f_1y + c_1 = 0$ and $x^2 + y^2 + g_2x + 2f_2y + c_2 = 0$ cut each other orthogonally, then :

(a) $2g_1g_2 + 2f_1f_2 = c_1 + c_2$ (b) $g_1g_2 + f_1f_2 = c_1 + c_2$

(c) $g_1g_2 + f_1f_2 = 2(c_1 + c_2)$ (d) $g_1g_2 + f_1f_2 + c_1 + c_2 = 0$

59. If the focus and directrix of a parabola are $(-\sin\alpha, \cos\alpha)$ and $x\cos\alpha + y\sin\alpha = p$ respectively, then length of the latus rectum will be:

(a) $2p$ (b) $4p$ (c) p_2 (d) $p(\cos\alpha - \sin\alpha)$

60. If the straight line $3x + 4y = \lambda$ touches the parabola $y^2 = 12x$ then value of λ is:

(a) 16 (b) 9 (c) -12 (d) -16

61. For the parabola $y^2 = 14x$, the tangent parallel to the line $x + y + 7 = 0$ is:

(a) $x + y + 14 = 0$ (b) $x + y + 1 = 0$ (c) $2(x + y) + 7 = 0$ (d) $x + y = 0$

62. Eccentricity of the ellipse $9x^2 + 5y^2 - 30y = 0$ is:

(a) $\frac{1}{3}$ (b) $\frac{2}{3}$ (c) $\frac{4}{9}$ (d) $\frac{5}{9}$

63. For the ellipse $\frac{x^2}{64} + \frac{y^2}{36} = 1$, S_1 and S_2 are two foci then for any point P lynig on the ellipse $S_1P + S_2P$ equals:

(a) 6 (b) 8 (c) 12 (d) 16

64. The coordinates of the foci fo the hyperbola $9x^2 - 16y^2 = 144$ are:

(a) (0 ± 4) (b) $(\pm 4, 0)$ (c) $(0, \pm 5)$ (d) $(\pm, 0)$

65. The lengths of transverse and conjugate axes of the hyperbola $x^2 - 2y^2 - 2x + 8y + 1 = 0$ will be respectively:

(a) $2\sqrt{3}, 2\sqrt{6}$ (b) $\sqrt{3}\sqrt{6}$ (c) $4\sqrt{3}, 4\sqrt{6}$ (d) $\frac{1}{2}\sqrt{3}, \frac{1}{2}\sqrt{6}$

66. If $y = x^{(\log x)}$ then $\frac{dy}{dx}$ equals :

(a) $(\log x)x^{(\log x)}$ (b) $\frac{2}{x}\log(\log x^{(\log x)})$ (c) $\frac{2}{x}(\log x)x^{(\log x)}$ (d) $(\log x)x^{(\log x - 1)}$

67. If $x^y = e^{(x-y)}$ then $\frac{dy}{dx}$ equals:

(a) $\frac{(x+y)}{\log(ex)}$ (b) $\frac{(x-y)}{x\log(ex)}$ (c) $\frac{(x+y)}{x\log(ex)}$ (d) $\frac{(x-y)}{\log(ex)}$

68. Equation of the tangent to the curve $y = be^{-x/a}$ at the point where it crosses y-axis is:

(a) $bx + ay = ab$ (b) $ax + by = ab$ (c) $bx + ay = -ab$ (d) $ax + by = -ab$

69. The points of the circle $x^2 + y^2 - 2x - 4y + 1 = 0$ where tangents are parallel to x-axis, will be:

(a) $(3, 2), (-1, 2)$ (b) $(-1, 2), (1, 0)$ (c) $(1, 2)(1, 0)$ (d) $(1, 0), (1, 4)$

70. The normal to the curve $y^2 = 4ax$ passing through $(a, 2a)$ is:

(a) $x + y = a$ (b) $x + y = 3a$ (c) $x - y = a$ (d) $y = 2a$

71. $\sin x\,(a+\cos x)$ is a maximum when x equals:

(a) $\frac{\pi}{6}$ (b) $\frac{\pi}{4}$ (c) $\frac{\pi}{3}$ (d) $\frac{\pi}{2}$

72. For positive values of x, the minimum value of x^x will be:

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

73. The points situated on $x^2 = 2y$ and nearest ot (0, 5) are:

(a) (0, 0) (b) $(\pm 2, 2)$ (c) $(\pm 2\sqrt{2}, 4)$ (d) $(\pm 2\sqrt{3}, 6)$

74. If $u = \sin^{-1}\left(\frac{\sqrt{x}-\sqrt{y}}{\sqrt{x}+\sqrt{y}}\right)$ then the value of $x\frac{\partial \upsilon}{\partial x} + y\frac{\partial u}{\partial y}$ is:

(a) 0 (b) 1 (c) $\frac{x-y}{x+y}$ (d) $\frac{x+y}{x-y}$

75. $\int e^x \sin x\,dx$ equals:

(a) $e^x(\sin x - \cos x) + c$ (b) $e^x(\cos x - \sin x) + c$ (c) $\frac{1}{2}e^x(\sin x - \cos x) + c$ (d) $\frac{1}{2}e^x(\cos x - \sin x) + c$

76. If $\int x\tan^{-1} x\,dx = \frac{1}{2}(x^2+\lambda)\tan^{-1} x - \mu x + C$ then values of λ and μ are :

(a) $\lambda = 0, \mu = 1$ (b) $\lambda = 1, \mu = -\frac{1}{2}$ (c) $\lambda = -1, \mu = -\frac{1}{2}$ (d) $\lambda = 1, \mu = \frac{1}{2}$

77. $\int_0^{\pi/2} f\frac{\sqrt{\cot x}}{1+\sqrt{\cot x}}\,dx$ equals:

(a) $\frac{\pi}{6}$ (b) $\frac{\pi}{4}$ (c) $\frac{\pi}{3}$ (d) $\frac{\pi}{2}$

78. $\int_0^{\pi/2} \sin 2x \log(\tan x)\,dx$ equals:

(a) 1 (b) $\frac{1}{2}$ (c) 0 (d) $-\frac{1}{2}$

79. $\int_{-a}^{a} \frac{x^5\cos(1+x^4)}{(1+x^4)}\,dx$ equal:

(a) 0 (b) 1 (c) a (d) $2a$

80. The area enclosed between the curve $y = x$ and $y^2 = 16x$ is:

(a) $\frac{16}{3}$ sq. unit (b) $\frac{32}{2}$ sq.unit (c) $\frac{64}{3}$ sq. unit (d) $\frac{128}{3}$ sq. unit

81. $\int_0^{\pi/4} \frac{\sqrt{\tan x}}{\sin x\cos x}\,dx$ equals:

(a) 0 (b) $\frac{1}{2}$ (c) 1 (d) 2

82. Solution of the equation $y - x\frac{dy}{dx} = a\left(y^2 + \frac{dy}{dx}\right)$ is

(a) $(x+a)(1-ay) = cy$ (b) $(x+a)(1+ay) = cy$ (c) $(1+ax)(1+y) = cy$ (d) $(1-ax)(1+ay) = cy$

83. If $\frac{dy}{dx} = e^{x+y}$ and it is known that for $x = 1, y = 1$; if $x = -1$, then the value of y will be:

(a) e^2 (b) e (c) 1 (d) –1

84. The solution of the differential equation $\frac{dy}{dx} = (4x + y)^2$ is:

(a) $4x + y + 1 = \tan(2x + c)$ (b) $4x + y + 1 = 2\tan(2x + c)$

(c) $2(4x + y + 1) = \tan(2x + c)$ (d) $\tan(4x + y + 1) = 2x + c$

85. If the solution of the differential equation $\frac{dy}{dx} = \frac{x + y - z}{x + y}$ is $x + y - 1 = Ce^u$, then the value of u is:

(a) $x + y$ (b) xy (c) $x - y$ (d) $x + y + 1$

86. The solution of the equation $\frac{dx}{dt} = t - s$ is:

(a) $s = t + Ce^{-t}$ (b) $s = t - 1 + Ce^{-t}$ (c) $s + t = Ce^{-t}$ (d) $s + t = Ce^{-t} - 1$

87. The solution of the differential equation

$(1 + y^2) + (x - e^{-\tan^{-1} y})\frac{dy}{dx} = 0$ is:

(a) $e^{\tan^{-1} y} = x\tan^{-1} y + c$ (b) $xe^{\tan^{-1} y} = \tan^{-1} y + c$

(c) $ye^{\tan^{-1} y} = \tan^{-1} y + c$ (d) $x + y^3 = c$

88. The solution of the equation : $(x + 2y^3)\frac{dy}{dx} = y$

(a) $x = y(y^2 + c)$ (b) $xy = y^2 + c$ (c) $y = x(y^2 + c)$ (d) $x + y^3 = c$

89. Two balls are drawn at random from a bag containing 6 white. 4 red and 5 black balls. The probability that both these balls ate black, is :

(a) $\frac{1}{21}$ (b) $\frac{2}{25}$ (c) $\frac{2}{21}$ (d) $\frac{2}{35}$

90. A problem is given to three students A, B and C whose chances of solving it are $\frac{1}{2}, \frac{1}{3}$ and $\frac{1}{4}$ respectively. The probability that this problem will be solved, is:

(a) $\frac{1}{24}$ (b) $\frac{1}{6}$ (c) $\frac{2}{3}$ (d) $\frac{3}{4}$

91. 6 boys and 6 girls sit in a row randomly. The probability that all the girls sit together is:

(a) $\frac{1}{132}$ (b) $\frac{1}{44}$ (c) $\frac{5}{132}$ (d) $\frac{7}{132}$

92. Probabilities of three students A, B and C to pass an examination are respectively $\frac{1}{3}, \frac{1}{4}$ and $\frac{1}{5}$. The probability that exactly one student will pass is:

(a) $\frac{5}{12}$ (b) $\frac{7}{30}$ (c) $\frac{13}{30}$ (d) $\frac{3}{5}$

93. Different words are written with the letters of PEACE. The probability that both E's come together is :

(a) $\frac{1}{3}$ (b) $\frac{2}{5}$ (c) $\frac{3}{5}$ (d) $\frac{4}{5}$

94. The probability of throwing 6 at least one in four throws of a die is :

(a) $\frac{1}{6}$ (b) $\frac{2}{3}$ (c) $\frac{625}{1296}$ (d) $\frac{671}{1296}$

95. An untrue coin is such that when it is tossed the chances of appearing head is twice the chances of appearance of tail.The chance of getting head in one toss of the coin is:

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

96. The standard deviation of first n natural numbers is:

(a) $\sqrt{\frac{n^2+1}{12}}$ (b) $\sqrt{\frac{n^2-1}{12}}$ (c) $\frac{n^2+1}{12}$ (d) $\frac{n^2-1}{12}$

97. The probability of randomly chosing 3 defectless bulls from 15 electric bulbs of which 5 bulbs are defective, is

(a) $\frac{3}{10}$ (b) $\frac{7}{10}$ (c) $\frac{24}{91}$ (d) $\frac{67}{91}$

98. Of a distribution, coefficient of skewness is 0.32, standard deviation is 6.5 and the mean is 29.6 then its mode will be:

(a) 28.12 (b) 27.52 (c) 27.01 (d) 26.61

99. Normal distribution:

(a) is unimodal (b) is bimodal (c) is multi modal (d) has no mode

100. Probability of four digit numbers, which are divisible by three, formed out of digits 1, 2, 3, 4, 5 us :

(a) $\frac{1}{5}$ (b) $\frac{1}{4}$ (c) $\frac{1}{3}$ (d) $\frac{1}{2}$