Series A **SR112**

Direction for Q. 1–5 : Read each sentence to find if there is any grammatical error in it. If there is error, it will be only in one part of the sentence. The number or alphabet of that part is your answer. (Disregard punctuation errors, if any).

1. I believe (A) / that respect (B) / is more preferable than (C)/ money (D)

2. I never have (A) / visited (B) / or intend to visit (C) / foreign countries. (D)

3. In this way nuclear fission, (A) / or the splitting (B) / of the atom, (C) have been achieved. (D)

4. Modern film techniques (A) / are far superior (B) / than that (C) / employed in the past. (D)

5. No sooner the news appeared in the paper (A) / than (B) / there was a rush (C) / in the counter. (D)

Direction for Q. 6–10 : In this format four parts of each sentence are given as (A), (B), (C), (D). These are in a sequence. One has to point out which part is not acceptable in standard English.

6. (A) He accepted
   (B) all the things
   (C) which providence gave him
   (D) with thankful good humour

7. (A) Nothing has
   (B) or could be
   (C) more unfortunate
   (D) than his departure

8. (A) They were quarrelling between themselves
   (B) when all of a sudden it
   (C) occurred to them that someone was watching
   (D) all the five of them

9. (A) when at last we got to
   (B) the theatre, the much
   (C) publicized play
   (D) was already begun

10. (A) one of the biggest
    (B) industrial houses
    (C) in Maharashtra
    (D) are declaring a lock out

Direction for Q. 11–15 : Fill in the blanks :

11. It was the help he got from his friends which ..... him through the tragedy.
    (A) supported
    (B) helped
    (C) parked
    (D) boosted

12. Anil got the company car for a ..... price as he was the senior most employee in the company.

(A) discounted

(B) nominal

(C) fixed

(D) reduced

13. His ..... of the topic was so good that students had few doubts to raise at the end.

(A) exposition

(B) picturisation

(C) clarity

(D) exposure

14. Beauty is to ugliness as adversity is to .....

(A) happiness

(B) prosperity

(C) misery

(D) cowardice

15. All of us should abide ..... the laws of our country.

(A) on

(B) to

(C) by

(D) in

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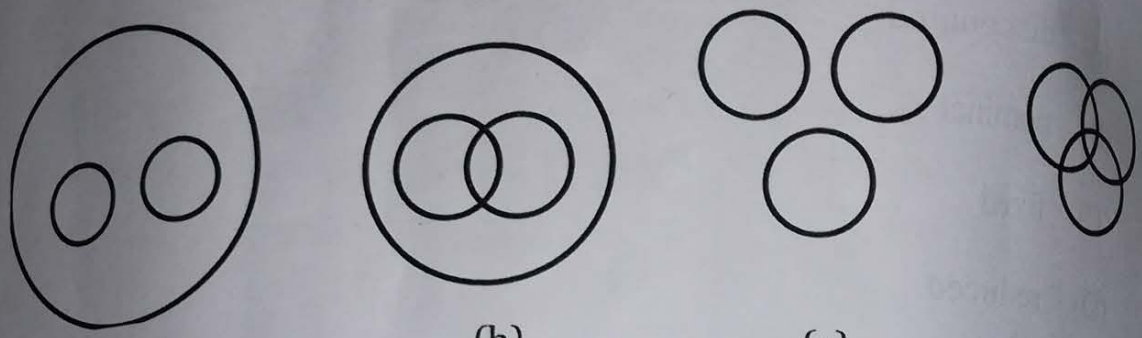
Direction for Q. 16–20 : Choose the Venn diagram which best illustrates the three given classes in each questions :



(a) (b) (c) (d)

16. Mercury, Mars, Planets

(A) (a)

(B) (b)

(C) (c)

(D) (d)

17. Yak, Zebra, Deer

(A) (a)

(B) (b)

(C) (c)

(D) (d)

18. Water, Atmosphere, Hydrogen

(A) (a)

(B) (b)

(C) (c)

(D) (d)

19. Diseases, Leprosy, Scurvy

(A) (a)

(B) (b)

(C) (c)

(D) (d)

20. Doctors, Lawerers, Professionals

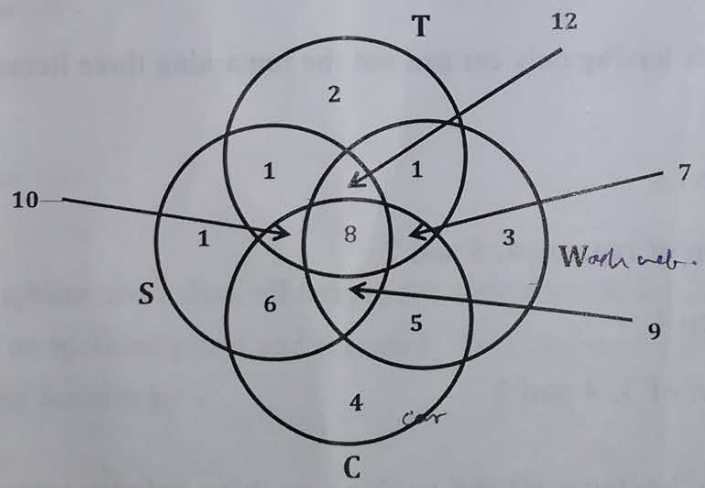
(A) (a)

(B) (b)

(C) (c)

(D) (d)

Direction for Q. 21–25 : Study the following diagram carefully :



Circle S stands for households having a scooter;

Circle T stands for households having a TV set;

Circle W stands for households having a washing machine;

Circle C stands for households having a car.

Please Note : The different numbers indicate the non-overlapping regions e.g., S represents union of regions 1, 11, 12, 8, 9, 10 and 6.

21. Households having car but not washing machine are indicated by :

(A) union of region 6, 10 and 4

(B) region 3

(C) region 13

(D) region 8

22. Households having scooter, TV set and washing machine and not car are represented by the region :

(A) 4

(B) 7

(C) 11

(D) 12

23. Households having only car and not the remaining three items are represented by :

(A) region 5

(B) union of regions 4, 5 and 7

(C) region 4

(D) union of 3, 4 and 2

24. Households having a car and washing machine only are represented by :

(A) region 5

(B) union of regions 5, 7, 8 and 9

(C) union of regions 9 and 8

(D) union of region 11 and region 5

25. Households having neither scooter nor car are represented by :

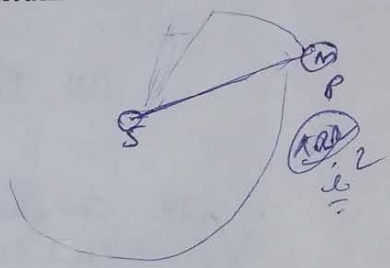
(A) region 2

(B) union of region 2, 13 and 3

(C) region 3

(D) region 5

26. The area A swept out by the line joining the star to its planet of mass m per second has the value in terms of the angular momentum l of the planet :



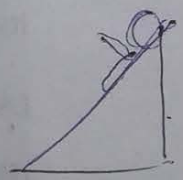
(A) l/m

(B) $l^2/2m$

(C) $l^2/2$

(D) $l/2m$

27. A hollow sphere and a disc, all having the same mass and radius are placed at the top of an inclined plane and released. The least time will be taken to roll down to the bottom by :



(A) The solid sphere

(B) The hollow sphere

(C) The disc

(D) All will take same time

28. In Rutherford Scattering, an α-particle of energy E is scattered through an angle θ, the differential scattering cross-section is proportional to

(A) $E\cot\frac{\theta}{2}$

(B) $E^2\sin^4\frac{\theta}{2}$

(C) $E^{-2}\left(\sin\frac{\theta}{2}\right)^{-4}$

(D) $E\left(\sin\frac{\theta}{2}\right)^{-4}$

29. The electric potential at a point is $\Phi = x^2y + yz$. The electric field at point (1, 3, 1) is :

(A) 7 units

(B) 70 units

(C) 49 units

(D) 490 units

30. A particle of charge q and mass m moves in a circular orbit of radius r with angular speed ω. The ratio of the magnitude of its magnetic moment to that of its angular momentum depends on :

(A) ω and q

(B) ω, q and m

(C) q and m

(D) ω and m

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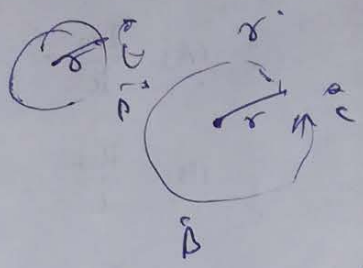
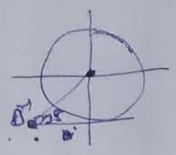
31. A small current loop of radius r and current i is placed in the magnetic field B, making angle 30° with the axis of the loop. The magnetic force on the current loop produces a torque equal to



(A) $2\pi r^2 iB$

(B) $\pi r^2 iB$

(C) $\frac{1}{2}\pi r^2 iB$



(D) $\frac{1}{4}\pi r^2 iB$

32. The value of entropy at absolute zero of temperature would be :

(A) zero for all the materials

(B) Finite for all the materials

(C) Zero for some materials and non-zero for others

(D) Unpredictable for any material

33. L, C and R represent the physical quantities inductance, capacitance and resistance respectively. Which of the following combinations do not have dimensions of time ?

(A) RC

(B) L/C

(C) $\sqrt{LC}$

(D) L/R

34. The quality factor of series L-C-R circuit having resonance frequency ω is given by

(A) $\frac{L\omega}{R}$

(B) $\frac{R\omega}{L}$

(C) $\frac{C\omega}{R}$

(D) $\frac{\omega}{LR}$

35. Given $\vec{E} = E_m \sin(\omega t - \beta z)\hat{a}_y$ in free space, then $\vec{B}$ will be given by :

(A) $-\frac{E_m \beta}{\omega}\sin(\omega t - \beta z)\hat{a}_z$

(B) $-\frac{E_m \beta}{\omega}\cos(\omega t - \beta z)\hat{a}_x$

(C) $-\frac{E_m \beta}{\omega}\sin(\omega t - \beta z)\hat{a}_y$

(D) None of these

36. The total energy of a hydrogen atom in the ground state is –13.6 eV. If the potential energy in the first excited state is taken as zero then the total energy in the ground state will be (in eV)

(A) –3.4

(B) 3.4

(C) –6.8

(D) 6.8

37. According to uncertainty relation the minimum uncertainty in the velocity of electron orbiting around the nucleus of radius r is :

(A) $\frac{h}{2\pi mr}$

(B) $\frac{\hbar}{2mr}$

(C) 2hmr

(D) Zero

38. The Gaussian distribution of random error f(x) can be expressed as :

(A) $\frac{h}{\sqrt{\pi}}\exp(h^2x^2)$

(B) $-\frac{h}{\sqrt{\pi}}\exp(h^2x^2)$

(C) $\frac{h}{\pi}\exp(-h^2x^2)$

(D) $\frac{h}{\sqrt{\pi}}\exp(-h^2x^2)$

39. The wave function in the ground state of hydrogen atom is given by $\psi = Ae^{-r/a}$ where $A=\sqrt{\frac{1}{\pi a^3}}$. The average of r is :

(A) 0

(B) $\frac{3}{2}a$

(C) $\frac{1}{2}a$

(D) $\frac{5}{2}a$

40. The electron emitted in beta radiation originates from :

(A) Inner orbit of atoms

(B) free electrons exciting in nuclei

(C) decay of a neutron in a nucleus

(D) photon escaping from the nucleus

41. On the annihilation of a particle and its anti-particle, the energy released is E, mass of each particle is

(A) $\frac{E}{c^2}$

(B) $\frac{E}{2c^2}$

(C) $\frac{E}{c}$

(D) $\frac{E}{2c}$

42. A slowly moving electron collides with a position at rest and annihilates it producing two photons. If the rest mass of the electron and position be m_0, then the frequency of each photon is :

(A) $2m_0c^2$

(B) m_0c^2

(C) $\frac{m_0c^2}{h}$

(D) $\frac{2m_0c^2}{h}$

43. A parallel beam of electrons falls on a long slit of width 1 μm formed central diffraction maximum of 0.24 mm on an electron sensitive screen kept at a distance of 25 cm in the front of the slit. Then de-Broglie wavelength of the electron is :

(A) 1.2 Å

(B) 2.4 Å

(C) 3.6 Å

(D) 4.8 Å

44. A photon after colliding with an electron of mass m is scattered at an angle è. The change in the wavelength of the photon is given by :

(A) $\frac{hc}{m}(1-\cos\theta)$

(B) $\frac{mc}{h}(1-\cos\theta)$

(C) $\frac{h}{mc}(1-\cos\theta)$

(D) $\frac{hc}{m}(1+\cos\theta)$

45. The magnitude of spin angular momentum $\vec{S}$ of a nucleon in a nucleus is :

(A) $\hbar$

(B) $1/2\hbar$

(C) $\sqrt{\frac{3}{4}}\hbar$

(D) $\frac{3}{4}\hbar$

46. The quanta of energy in elastic wave is called a :

(A) Photon

(B) Phonon

(C) Hyperon

(D) Nucleon

47. In presence of external magnetic field as per normal Zeeman effect, a spectral line of frequency v will get splitted into two additional lines of frequency :

(A) $v \pm \frac{Be}{4\pi m}$

(B) $v \pm \frac{Beh}{4\pi m}$

(C) $v \pm \frac{Be}{2m}$

(D) $v \pm \frac{Be}{2\pi m}$

48. The specific heat of an ideal Fermi gas in three dimension at very low temperature T varies as

(A) T

(B) $T^{3/2}$

(C) T^2

(D) T^3

49. As per the Maxwell equation, the ampere circuital law, $\vec{\nabla} \times H$ is equal to

(A) 0

(B) J

(C) $\frac{d}{dt}E$

(D) $J + \frac{d}{dt}D$

50. In a Thomson's setup for determining e/m of electron, if the applied electric potential is V, plate separation is d and applied magnetic field is B, then the e/m is :

(A) $\frac{V}{2B^2d}$

(B) $\frac{V^2}{2B^2d^2}$

(C) $\frac{V}{2B^2d^2}$

(D) $\frac{V}{2Bd^2}$

51. Find the basis of the subspace if $\vec{u} = \{(a,b,c,d)\}$, such that a + c + d = 0, b + d = 0, be a subspace of $\mathbb{R}^4$

(A) $\{(-1-101),(-1010)\}$

(B) $\{(-1101),(-1010)\}$

(C) $\{(-1-101),(-10-10)\}$

(D) $\{(-1-10-1),(-10-10)\}$

52. Find the value of λ and μ so that the following equations

$$2x+3y+5z=9,\ 7x+3y-2z=8,\ 2x+3y+\lambda z=\mu$$

have no solution.

(A) $\lambda = 5$, Any value of μ

(B) $\lambda = 5,\ \mu \neq 9$

(C) $\lambda = 5,\ \mu = 9$

(D) $\lambda \neq 5,\ \mu \neq 9$

53. The eigenvectors of the matrix

$$\begin{bmatrix} 1 & 1 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{bmatrix}$$

are

(A) $[1,0,0]^T$

(B) $[1,0,0]^T, [0,0,1]^T$

(C) $[1,0,0]^T, [0,0,1]^T, [0,1,0]^T$

(D) $[1,0,0]^T, [1,0,1]^T, [0,1,0]^T$

54. Let f(x) be a real valued function which is continuous on a closed interval [a, b] and differentiable in the open interval (a, b). Then there exists one value c, $a < c < b$, such that

(A) $f'(c) = f(a) / (b-a)$

(B) $f'(c) = (f(a) - f(b)) / (b-a)$

(C) $f'(c) = (f(a) * f(b)) / (b-a)$

(D) $f'(c) = (f(b) - f(a)) / (b-a)$

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55. Evaluate the following :

$$\lim_{x\to 0}\frac{e^{x}-2\cos x+e^{-x}}{x\sin x}$$

(A) 6

(B) 4

(C) 2

(D) Zero

56. Find the surface area of solid generated by revolving the circle $x^2+(y-b)^2=a^2,\ b\geq a$ about the x – axis.

(A) $2\pi^2 ab$

(B) $4\pi^2 ab$

(C) $4\pi^2\left(\frac{a}{b}\right)$

(D) $4\pi^2(b/a)$

57. The inclined asymptote of the curve is $y=x^2/\sqrt{x^2-4}$ are

(A) x = 2

(B) y = 2, x = –x

(C) 2y = x, y = –2x

(D) $y = x^2,\ y = -x^2$

58. Find df/dt at t = 0, if $f(x,y,z) = x^3 + xz^2 + y^3 + xyz$, $x = e^t$, $y = \cos t$, $z = t^3$.

(A) 1

(B) 2

(C) 3

(D) 4

59. Evaluate $I = \int_0^{\pi/2} \ln \sin x \, dx$

(A) $I = \frac{\pi}{2} \ln 2$

(B) $I = -\frac{\pi}{2} \ln 2$

(C) $I = \frac{\pi}{2} \ln 3$

(D) $I = -\frac{\pi}{2} \ln 3$

60. Calculate $\iint \frac{\sin x}{x} dA$ over a region R which is a triangle in the xy–plane bounded by the x–axis, the line y = x and the line x = 1.

(A) 1 – sin 1

(B) 1 + cos 1

(C) 1 + sin 1

(D) 1 – cos 1

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61. Find the area bounded by the ellipse $x^2/a^2 + y^2/b^2 = 1$ using the double integration.

(A) πab

(B) $\pi ab/4$

(C) $4/\pi ab$

(D) $\pi ab/2$

62. Evaluate $\int_0^1 \int_0^{\sqrt{(1-x^2)}} \int_{\sqrt{x^2+y^2}}^1 \frac{dx\,dy\,dz}{\sqrt{x^2+y^2+z^2}}$

(A) $(\sqrt{2}+1)\pi/4$

(B) $(\sqrt{2}-1)\pi/4$

(C) $(\sqrt{2}+1)\pi/3$

(D) $(\sqrt{2}-1)\pi/3$

63. The differential equation corresponding to the system $x = A\cos(pt - \alpha)$ is :

(A) $x\frac{d^3x}{dt^3} - \frac{d^2x}{dt^2} = 0$

(B) $x\frac{d^3x}{dt^3} - \left(\frac{dx}{dt}\right)\frac{d^2x}{dt^2} = 0$

(C) $\frac{d^3x}{dt^3} - \left(\frac{dx}{dt}\right)\frac{d^2x}{dt^2} = 0$

(D) $\left(\frac{dx}{dt}\right)\frac{d^3x}{dt^3} - x\frac{d^2x}{dt^2} = 0$

64. Solve the differential equation $\frac{dy}{dx}=\frac{y-x+1}{y-x+5}$.

(A) $(y-x)^2-10(y-x)+8x=c$, c is a constant.

(B) $(y-x)^2+10(y-x)+8x=c$, c is a constant.

(C) $(y-x)^2+10(y-x)-8x=c$, c is a constant.

(D) $(y-x)^2-10(y-x)-8x=c$, c is a constant.

65. Solve the initial value problem $\cos x\frac{dy}{dx}+y=\sin x,\ y(0)=2$.

(A) $y=1+\frac{(1+x)\cos x}{1+\sin x}$, sin x $\neq = -1$

(B) $y=1+\frac{(1+x)\cos x}{1-\sin x}$, sin x $\neq = -1$

(C) $y=1+\frac{(1-x)\cos x}{1+\sin x}$, sin x $\neq = -1$

(D) $y=1-\frac{(1+x)\cos x}{1+\sin x}$, sin x $\neq = -1$

66. Solve the initial value problem $y'' + 6y' + 13y = 0$; $y(0) = 3$, $y'(0) = 7$.

(A) $y(x)=e^{-x}(3\cos 2x+8\sin 2x)$

(B) $y(x)=e^{-2x}(3\cos 2x-8\sin 2x)$

(C) $y(x)=e^{-3x}(3\cos 2x+8\sin 2x)$

(D) $y(x)=e^{3x}(3\cos 2x-8\sin 2x)$

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67. Solve the differential equation $\left(D^2+3D+2\right)y=e^{e^x}$.

(A) $y(x) = c_1e^{-x} + c_2e^{-2x} + e^{(e^x-2x)}$; c_1, c_2 are constants.

(B) $y(x) = c_1e^{x} + c_2e^{-2x} + e^{(e^x-2x)}$; c_1, c_2 are constants.

(C) $y(x) = c_1e^{-x} + c_2e^{2x} + e^{(e^x-2x)}$; c_1, c_2 are constants.

(D) $y(x) = c_1e^{-x} + c_2e^{-2x} + e^{(e^{-x}-2x)}$; c_1, c_2 are constants.

68. Obtain the tangential component of the acceleration of a particle which is at a point $P(x, y)$ on the curve $x = e^t \cos t$, $y = e^t \sin t$ at any time t.

(A) e^t

(B) $\sqrt{2}\, e^t$

(C) $\sqrt{2}\, e^{2t}$

(D) $\sqrt{3}\, e^{3t}$

69. If $f = x^2 + y^2 + z^2$ and $\vec{r} = x\hat{i} + y\hat{j} + z\hat{k}$, then $\nabla.(f\vec{r})$ equals :

(A) f

(B) $2f$

(C) $4f$

(D) $5f$

70. If $\vec{F} = (5xy - 6x^2)\hat{i} + (2y - 4x)\hat{j}$, evaluate $\int \vec{F}.d\vec{r}$ over a curve $C: y = x^3$ in the xy – plane from the point (1,1) to (2.8).

(A) 5

(B) 10

(C) 20

(D) 35

71. A committee of 4 members is to be appointed from 3 officers of the production department, 4 officers of the purchase department , 2 officers of the sales department and 1 chartered accountant. Find the probability of forming the committee which must include the chartered accountant.

(A) 0.10

(B) 0.20

(C) 0.40

(D) 0.60

72. What is the probability of getting 7 or 11, when a pair of unbiased dice are tossed ?

(A) 1/16

(B) 2/9

(C) 1/18

(D) 1/11

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73. The probability that at least one of the events A and B occurs is 0.8 and the probability that both the events occur simultaneously is 0.25. Find the probability $P(\overline{A})+P(\overline{B})$.

(A) 0.95

(B) 0.85

(C) 0.75

(D) 0.65

74. Events E and F are given to be independent. Find P(F) if it is given that $P(E) = 0.4$ and $P(E \cup F) = 0.55$.

(A) 1/4

(B) 1/16

(C) 1/32

(D) 1/64

75. A and B are two independent events such that $P(A)=0.6$, $P(A\cup B)=0.8$. Find P(B).

(A) 1/4

(B) 1/3

(C) 1/2

(D) 1/5

76. The voltage gain of an amplifier with 9% negative feedback is 10, the voltage gain without feedback will be

(A) 90

(B) 10

(C) 1.25

(D) 100

77. The input signal given to CE amplifier having a voltage gain of 150 is $V_i = 2\cos(5t + 10°)$. The corresponding output signal is :

(A) $300\cos(5t + 90°)$

(B) $300\cos(5t + 190°)$

(C) $300\cos(5t + 150°)$

(D) $300\cos(5t + 10°)$

78. One condition for oscillation is :

(A) A phase shift around the feedback loop of 180°

(B) A gain around the feedback loop of one third

(C) A phase shift around the feedback loop of 90°

(D) A gain around the feedback loop of one third

79. The drain current in a n-channel FET is due to :

(A) Only electron flow

(B) Only hole flow

(C) Both electron and hole flow

(D) None of these

80. In a transistor, the change in base current from 100μA to 125μA causes a change in collector current from 5mA to 7.5mA, keeping collector-to-emitter voltage constant at 10V. What is the current gain of the transistor ?

(A) 200

(B) 100

(C) 50

(D) 25

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81. For a BJT, the current amplification factor $\alpha = 0.90$. This transistor is connected in CE configuration. When the base current changes by 0.4mA, the change in collector current will be :

(A) 36mA

(B) 9mA

(C) 4mA

(D) 3.6mA

82. Which of the following factors do not affect the frequency stability of an oscillator ?

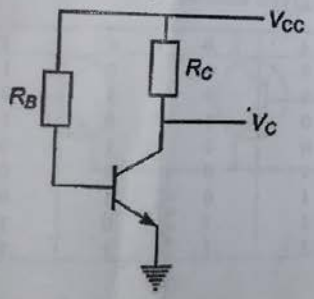
(A) output load

(B) Inter-element capacitances and stray capacitances

(C) temperature variation

(D) Coil size

83. Calculate the collector voltage (V_C) of the transistor circuit shown below :



(Given $\alpha = 0.96, I_{CBO} = 20\mu A, V_{BE} = 0.3V, R_B = 100\Omega, V_{CC} = +10V$)

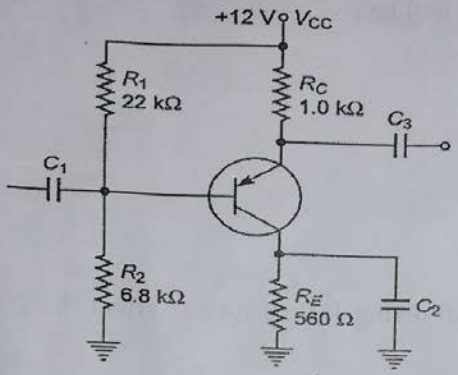
(A) 3.78V

(B) 3.82V

(C) 4.72V

(D) 9.7V

84. A minimum value for the emitter bypass capacitor C_2, in the circuit given below, if the amplifier must operate over a frequency range from 2kHz to 10kHz, is :



(A) 1.42V

(B) 1.42mF

(C) 1.42μF

(D) 1.42pF

85. Which one of the following gives the simplified Boolean expression for Y of the 3-variable truth table given below :

A	B	C	Y
0	0	0	1
0	0	1	0
0	1	0	1
0	1	1	0
1	0	0	0
1	0	1	0
1	1	0	1
1	1	1	1

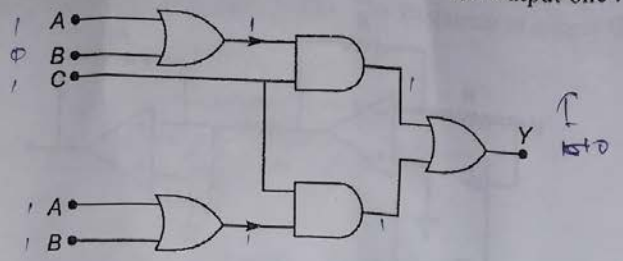
(A) $A\overline{C} + AB$

(B) $\overline{A}\overline{C} + AB\overline{C} + ABC$

(C) $\overline{ABC} + \overline{A}B\overline{C} + AB$

(D) $\overline{ABC} + \overline{A}B\overline{C} + AB\overline{C} + ABC$

86. What must be input, in the circuit given below, to get output one :



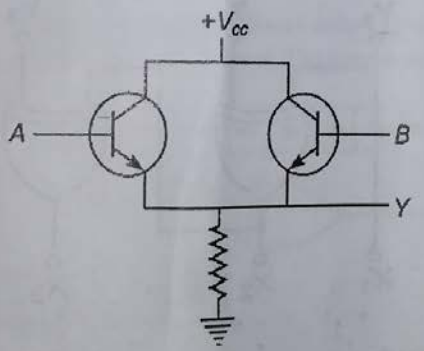
(A) 110

(B) 101

(C) 100

(D) 010

87. The following circuit function as :



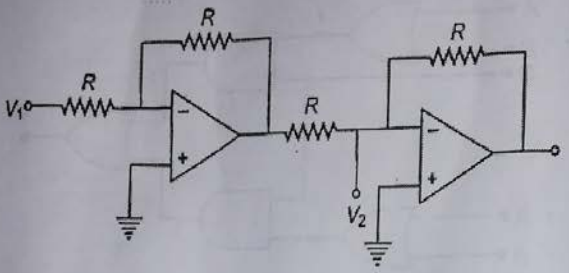
(A) an OR gate

(B) an AND gate

(C) a NOR gate

(D) a NAND gate

88. The circuit given below is based on ideal operational amplifiers. It acts as a



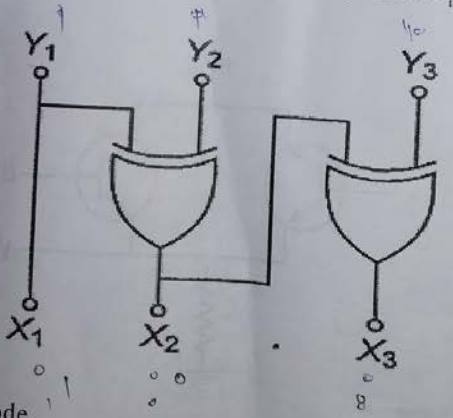
(A) subtractor

(B) buffer amplifier

(C) adder

(D) divider

89. The logic circuit given below converts a binary code $Y_1Y_2Y_3$ into :



(A) Excess-3 code

(B) Gray code

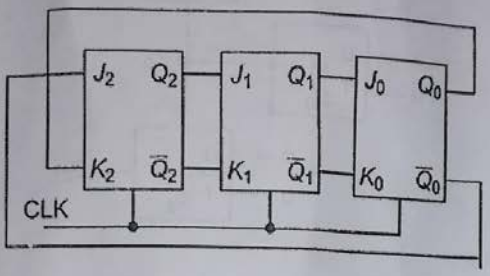
(C) BCD code

(D) Hamming code

Series A

SR112

90. The three stage Johnson counter shown below is clocked at a constant frequency of f_c from starting state of $Q_2Q_1Q_0 = 101$. The frequency of output $Q_2Q_1Q_0$ will be :



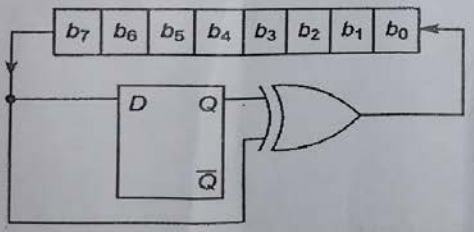
(A) f_c

(B) $f_c/2$

(C) $f_c/4$

(D) $f_c/8$

91. The 8 bit shift register and D flip-flop shown below is synchronized with same clock. The D flip-flop is initially cleared. The circuit act as :



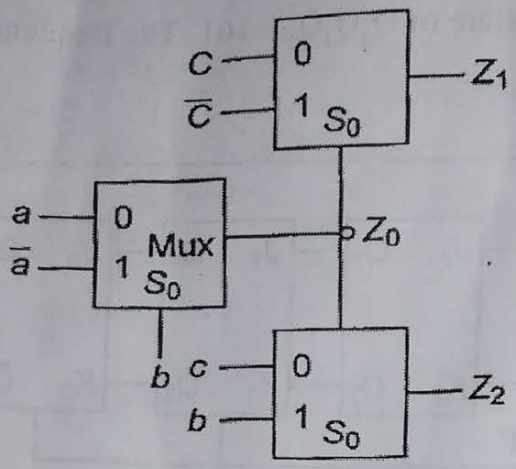
(A) Binary to 2's complement converter

(B) Binary to Gray code converter

(C) Binary to 1's complement converter

(D) Binary to Excess-3 code converter

92. A MUX network is shown below :



Then Z_1 equals :

(A) a + b + c

(B) ab + ac + bc

(C) $a \odot b \odot c$

(D) $a \oplus b \oplus c$

93. For a 12-bit A/D converter, the range of input signal is 0 to +10V. The voltage corresponding to 1 LSB will be :

(A) 0

(B) 0.0012V

(C) 0.0024V

(D) 0.833V

94. The exact range of 5-bit converter used for Dc voltage range 0-10V is :

(A) 2.4650V

(B) 9.6875V

(C) 3.4725V

(D) 2.4725V

95. A memory system of size 16k bytes is required to be designed using memory chips which have 121 address lines and 4 data lines each. Then number of such chips required to design the memory system is :

(A) 2

(B) 4

(C) 8

(D) 16

96. The memory address range to which RAM will respond :

(A) 0000H to 1FFFH

(B) 0000H to 5FFFH

(C) 4000H to 5FFFH

(D) 3000H to FFFFH

97. The address range to which I/O chip will respond to

(A) 0000H to FFFFH

(B) 0000H to 5FFFH

(C) 4000H to 5FFFFH

(D) 3000H to FFFFH

98. The following instruction have been executed by an 8085 microprocessor :

Address(Hex)	Instruction	
6010	LXI	H, 8A79 H
6013	MOV	A, L
6015	ADD	H
6016	DAA	
6017	MOV	H, A
6018	PCHL	

From which address will the next instruction be fetched ?

(A) 6019

(B) 0379

(C) 6079

(D) Any one of these

99. The following sequence of instructions are executed by an 8085 microprocessor :

```
1000    LXI    SP, 27FF
10003   CALL       1006
1006    POPH
```

The contents of the stack pointer (SP) and the HL register pair on completion of execution of these instructions are :

(A) SP=27 FT, HL=1003

(B) SP=27 FD, HL=1003

(C) SP=27 FF, HL=1006

(D) SP=27 FD, HL=1006

100. A modulus-12 counter must have :

(A) 12 flip-flops

(B) 06 flip-flops

(C) 04 flip-flops

(D) 03 flip-flops