MIZORAM PUBLIC SERVICE COMMISSION

COMPETITIVE EXAMINATIONS FOR RECRUITMENT TO THE POST OF INSPECTOR OF LEGAL METROLOGY UNDER FOOD, CIVIL SUPPLIES & CONSUMER AFFAIRS DEPARTMENT, GOVERNMENT OF MIZORAM, DECEMBER, 2018

PHYSICS

PAPER - III

Time Allowed : 2 hours Full Marks : 200

All questions carry equal marks of two (2) each.
Attempt all questions.

1. The expected energy of an electron at absolute zero is called

(a) Fermi energy (b) Emission energy
(c) Work function (d) Potential energy

2. When the electrical conductivity in a semiconductor is due to the breaking of its covalent bonds, then the semiconductor is said to be

(a) Donar (b) Acceptor
(c) Intrinsic (d) Extrinsic

3. A piece of copper and the other of germanium are cooled from the room temperature to 80 K, then which of the following would be a correct statement

(a) Resistance increases for both
(b) Resistance decreases for both
(c) Resistance of copper increases while that of germanium decreases
(d) Resistance of copper decreases while that of germanium increases

4. The intrinsic semiconductor becomes an insulator at

(a) 0 ^{o}C (b) -100 ^{o}C
(c) 300 K (d) 0K

5. In comparison to a half wave rectifier, the full wave rectifier gives lower

(a) Efficiency (b) Average DC
(c) Average output voltage (d) None of these

6. Avalanche breakdown is due to

(a) Collision of minority charge carrier (b) Increase in depletion layer thickness
(c) Decrease in depletion layer thickness (d) None of these

7. Zener breakdown in a semiconductor diode occurs when

(a) Forward current exceeds certain value (b) Reverse bias exceeds certain value
(c) Forward bias exceeds certain value (d) Potential barrier is reduced to zero

8. Zener diode is used as

(a) Half wave rectifier (b) Full wave rectifier
(c) AC voltage stabilizer (d) DC voltage stabilizer

9. In an NPN transistor the collector current is $24\,mA$. If 80% of electrons reach collector its base current in mA is

(a) 9 (b) 8

(c) 6 (d) 4

10. If $\alpha = 0.98$ and current through emitter $i_e = 20\,mA$, the value of β is

(a) 4.9 (b) 49

(c) 3.2 (d) 32

11. A transistor is used in common emitter mode as an amplifier. Then

(a) The base-collector junction is forward biased

(b) The base-emitter junction is reverse biased

(c) The input signal is connected in series with the voltage applied to the base-emitter junction

(d) The input signal is connected in series with the voltage applied to bias the base collector junction

12. Which of these is unipolar transistor

(a) Point contact transistor (b) Field effect transistor

(c) PNP transistor (d) None of these

13. The following truth table corresponds to the logic gate

A	0	0	1	1
B	0	1	0	1
X	0	1	1	1

(a) NAND (b) OR

(c) AND (d) XOR

14. A photon, an electron and a uranium nucleus all have the same wavelength. The one with the most energy

(a) is the photon

(b) is the electron

(c) is the uranium nucleus

(d) depends upon the wavelength and the properties of the particle

15. Dual nature of radiation is shown by

(a) Diffraction and reflection (b) Refraction and diffraction

(c) Photoelectric effect alone (d) Photoelectric effect and diffraction

16. The wavelength of a matter wave is independent of

(a) Mass (b) Velocity

(c) Momentum (d) Charge

17. The energy of a photon of wavelength λ is given by

(a) $h\lambda$ (b) $ch\lambda$

(c) $\frac{\lambda}{hc}$ (d) $\frac{hc}{\lambda}$

18. A photon in motion has a mass

(a) $\frac{c}{h\nu}$ (b) $\frac{h}{\nu}$

(c) $h\nu$ (d) $\frac{h\nu}{c^2}$

19. Kinetic energy with which the electrons are emitted from the metal surface due to photoelectric effect is

(a) Independent of the intensity of illumination
(b) Independent of the frequency of light
(c) Inversely proportional to the intensity of illumination
(d) Directly proportional to the intensity of illumination

20. The number of photo-electrons emitted per second from a metal surface increases when

(a) The energy of incident photons increases (b) The frequency of incident light increases
(c) The wavelength of the incident light increases (d) The intensity of the incident light increases

21. The phase velocity v_p and the group velocity v_g of a de-Broglie wave in free space (speed of light c) are related as

(a) $v_p\ v_g = c^2$ (b) $v_p\ v_g = \sqrt{2}c$

(c) $\frac{v_p}{v_g} = c^2$ (c) $\frac{v_p}{v_g} = 1$

22. The expression $|\psi(r,t)|^2$ stands for

(a) Position (b) Position probability density
(c) Normalization (d) Time probability density

23. In three dimensions, Hamiltonian operator is

(a) $\frac{-\hbar^2}{2m}\nabla^2 + \mathrm{V(r,t)}$ (b) $\frac{-2m}{\hbar^2}\nabla^2 + \mathrm{V(r,t)}$

(c) $\frac{2m}{\hbar^2}\nabla^2$ (d) $\frac{2m}{\hbar^2}\nabla^2 + \mathrm{i}\hbar\frac{\partial}{\partial t}$

24. In quantum mechanics which of the following relation holds for position and momentum operators

(a) $\left[y, p_y\right] = i\hbar$ (b) $\left[y, p_x\right] = i\hbar$

(c) $\left[p_x, p_y\right] = i\hbar$ (d) $\left[x, y\right] = i\hbar$

25. Which of the following matrices is Hermitian

(a) $\begin{bmatrix} 0 & i \\ i & 0 \end{bmatrix}$ (b) $\begin{bmatrix} 0 & i \\ -i & 0 \end{bmatrix}$

(c) $\begin{bmatrix} i & 0 \\ i & 0 \end{bmatrix}$ (d) $\begin{bmatrix} i & 0 \\ 0 & -i \end{bmatrix}$

26. The eigen values of the matrix $\begin{bmatrix} \cos\theta & -\sin\theta \\ \sin\theta & \cos\theta \end{bmatrix}$ are

(a) $e^{\pm i\theta}$ (b) $e^{\pm 2i\theta}$

(c) $e^{\pm 3i\theta}$ (d) $e^{\pm i\theta/2}$

27. Two matrices $\boldsymbol{A} = \left[a_{ij} \right]$ and $\boldsymbol{B} = \left[b_{ij} \right]$ are said to be equal if

(a) $a_{ij} = b_{ij}$ (b) They are conformable

(c) $a_{ij} = b_{ij}$ and they are nonconformable (d) $a_{ij} = b_{ij}$ and they are conformable

28. Which of the following statements is correct

(a) Matrix addition is not always commutative

(b) Matrix multiplication is not always commutative

(c) Matrix multiplication is always commutative

(d) Matrix multiplication is not always associative

29. If $\boldsymbol{A}$ and $\boldsymbol{B}$ are square matrices of order n, then

(a) $Trace\,of\left(\boldsymbol{AB}\right) = Trace\,of\left(\boldsymbol{BA}\right)$ (b) $Trace\,of\left(\boldsymbol{AB}\right) \neq Trace\,of\left(\boldsymbol{BA}\right)$

(c) $Trace\,of\left(\boldsymbol{A}\right) = Trace\,of\left(\boldsymbol{B}\right)$ (d) None of these

30. If A is a square matrix, then

(a) $A + A^T$ and $A - A^T$ are both symmetric

(b) Both $A + A^T$ and $A - A^T$ are skew-symmetric

(c) $A + A^T$ is skew-symmetric and $A - A^T$ is symmetric

(d) $A + A^T$ is symmetric and $A - A^T$ is skew-symmetric

31. If A is a square matrix, then

(a) AA^T is symmetric but $A^T A$ is not symmetric

(b) Both AA^T and $A^T A$ are skew-symmetric

(c) Both AA^T and $A^T A$ are symmetric

(d) AA^T is skew-symmetric but $A^T A$ is symmetric

32. In a skew-Hermitian matrix

(a) Off-diagonal elements are either zero or purely imaginary

(b) Diagonal elements are all real

(c) Diagonal elements are either zero or purely imaginary

(d) Off diagonal elements are all real

33. If H is a Hermitian matrix, then the matrix e^{iH} is

(a) Unit matrix (b) Unitary matrix

(c) Orthogonal matrix (d) Hermitian

34. A Hermitian matrix A can be expressed as (B is real and symmetric while C is real and skew-symmetric)

(a) $B+iC$ (b) $B-iC$

(c) $B+C$ (d) $B-C$

35. If A is a square matrix of order n, then $adj\left(adjA\right)$ equals

(a) $\left|A\right|^{n-2}A$ (b) $\left|A\right|^{n}A$

(c) $\left|A\right|A$ (d) $\left|A\right|^{n}A^{n-2}$

36. If $A^{\dagger}=A^{-1}$ then the matrix A is

(a) Singular (b) Non-singular

(c) Orthogonal (d) Unitary

37. The fourier series expansion of a periodic function $f\left(x\right)$ in the interval $\left(-l,+l\right)$ is given by

$f\left(x\right)=\frac{a_0}{2}+\sum_{n=1}^{\infty}a_n\cos\frac{n\pi}{l}x+\sum_{n=1}^{\infty}b_n\sin\frac{n\pi}{l}x$, then

(a) $a_o=\frac{2}{l}\int_{-l}^{+l}f\left(x\right)dx$ (b) $a_o=\frac{1}{l}\int_{-l}^{+l}f\left(x\right)dx$

(c) $a_o=\frac{1}{2l}\int_{-l}^{+l}f\left(x\right)dx$ (d) $a_o=\frac{1}{4l}\int_{-l}^{+l}f\left(x\right)dx$

38. A periodic function is given by a function which

(a) has a period $T=2\pi$ (b) satisfies $f\left(t+T\right)=f\left(t\right)$

(c) satisfies $f\left(t+T\right)=-f\left(t\right)$ (d) has a period $T=-2\pi$

39. The eigen values of a square matrix A and its transpose A^{T}

(a) are equal (b) are conjugative

(c) differ by a factor, which is divisible by 2 (d) are orthogonal

40. A particle is moving under central force about a fixed centre of force. Choose the correct statement

(a) The motion of the particle is always on a circular path

(b) Its angular momentum is conserved

(c) Its kinetic energy remains constant

(d) The motion of the particle is always on an ellipsoidal path

41. A particle is moving on elliptical path under inverse square law force of the form $F\left(r\right)=-K/r^{2}$. The eccentricity of the orbit is

(a) A function of total energy (b) Independent of total energy

(c) A function of angular momentum (d) A function of linear momentum

42. Two particles of masses m and $2m$, interacting via gravitational force are rotating about common centre of mass with angular velocity ω at a fixed distance r. If the particle of mass $2m$ is taken as the origin O ($\mu = reduced\ mass$) then

(a) The force between them can be represented as $F = \mu\omega^2 r$

(b) In an inertial frame, fixed at the centre of mass, the origin is at rest

(c) In an inertial frame, the origin O is moving on an elliptical path

(d) In an inertial frame, the particle of mass m is moving on a circular path of radius $r/3$

43. Assuming the mass of hydrogen atom to be M, the reduced mass of H_2 molecule is

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

(c) $\frac{M}{2}$ (c) M

44. Consider a particle of mass *m* moving under a central force $F = -\frac{\partial V}{\partial r}\frac{\vec{r}}{r}$, the canonical momentum p_θ corresponding to the coordinate θ is given by

(a) $mr^2\theta$ (b) $mr^2\dot{\theta}$

(c) $mr\dot{\theta}$ (d) $mr^2\dot{\theta}^2$

45. For elliptical orbit the following relation holds ($e = eccentricity, E = total\ energy$)

(a) $e<1 and\ E<0$ (b) $e>1 and\ E<0$

(c) $e=1 and\ E>0$ (d) $e>1 and\ E>0$

46. A rigid body moving freely in space has degrees of freedom

(a) 3 (b) 4

(c) 6 (d) 9

47. If the generalized coordinate is angle θ, the corresponding generalized force has the dimensions of

(a) Force (b) Momentum

(c) Torque (d) Energy

48. The Lagrangian for a charged particle in an electromagnetic field is (where T is the kinetic energy, $\varnothing$ and $\vec{A}$ are magnetic scalar and vector potentials)

(a) $L = T + q\varnothing + q\left(\vec{v}.\vec{A}\right)$ (b) $L = T - q\varnothing - q\left(\vec{v}.\vec{A}\right)$

(c) $L = T - q\varnothing + q\left(\vec{v}.\vec{A}\right)$ (d) $L = T + q\varnothing - q\left(\vec{v}.\vec{A}\right)$

49. Hamiltonian canonical equations of motion for a conservative system are

(a) $-\frac{dq_i}{dt} = \frac{\partial H}{\partial p_i} and -\frac{dp_i}{dt} = \frac{\partial H}{\partial q_i}$ (b) $-\frac{dq_i}{dt} = \frac{\partial H}{\partial q_i} and -\frac{dp_i}{dt} = \frac{\partial H}{\partial p_i}$

(c) $-\frac{dq_i}{dt} = \frac{\partial H}{\partial p_i} and \frac{dp_i}{dt} = \frac{\partial H}{\partial q_i}$ (d) $\frac{dq_i}{dt} = \frac{\partial H}{\partial p_i} and -\frac{dp_i}{dt} = \frac{\partial H}{\partial q_i}$

50. The Hamiltonian corresponding to the Lagrangian $L = ax^2 + by^2 - kxy$ is

(a) $\frac{p_x^2}{2a} + \frac{p_y^2}{2b} + kxy$ (b) $\frac{p_x^2}{4a} + \frac{p_y^2}{4b} - kxy$

(c) $\frac{p_x^2}{4a} + \frac{p_y^2}{4b} + kxy$ (d) $\frac{p_x^2}{2a} + \frac{p_y^2}{2b} - kxy$

51. The generalized momentum p_x of a particle of mass m with velocity v_x in an electromagnetic field is given by

(a) $p_x = mv_x$ (b) $p_x = mv_x + qA_x$

(c) $p_x = mv_x - qA_x$ (d) $p_x = mq + v_x A_x$

52. The number of generalized coordinate in a simple pendulum is

(a) 1 (b) 2

(c) 3 (d) 4

53. Lagrange's equations for conservative system is (q_k = generalized coordinate)

(a) $\frac{d}{dt}\left(\frac{\partial L}{\partial \dot{q}_k}\right) - \frac{\partial L}{\partial q_k} = 0$ (b) $\frac{d}{dt}\left(\frac{\partial L}{\partial q_k}\right) - \frac{\partial L}{\partial \dot{q}_k} = 0$

(c) $\frac{d}{dt}\left(\frac{\partial \dot{L}}{\partial \dot{q}_k}\right) - \frac{\partial L}{\partial q_k} = 0$ (d) None of these

54. According to D'Alembert's principle

(a) The forces of constraints are irrelevant

(b) The virtual work of the constraints is zero

(c) Number of degrees of freedom is not relevant

(d) Both (a) and (b)

55. The impurity atoms with which pure silicon should be doped to make a *p*- type semiconductor are those of

(a) Phosphorus and boron (b) boron and aluminium

(c) boron and antimony (d) antimony and aluminium

56. The Fermi level of an intrinsic semiconductor is pinned at the centre of the band-gap. The probability of occupation of the highest electron state in valence band at room temperature, will be

(a) zero (b) between zero and half

(c) half (d) one

57. The depletion layer in a *p-n* junction diode consists layers of

(a) positively charged donor on the *p*-side and negatively charged acceptors on the *n*-side

(b) negatively charged donors on the *p*-side and positively charged acceptors on the *n*-side

(c) positively charged donors on the *n*-side and negatively charged acceptors on the *p*-side

(d) negatively charged donors on the *n*-side and positively charged acceptors on the *p*-side

58. When two identical zener diodes are connected in series, what happens to the breakdown voltage of the combination?

(a) It is halved (b) It is doubled

(c) It remains same (d) It becomes Zero

59. Eigen values of a Hermitian operator are

(a) imaginary (b) real

(c) can be real or imaginary (d) zero

60. Eigen functions of a Hermitian operator corresponding to different eigen values are

(a) orthogonal (b) orthonormal

(c) orthogonal as well as orthonormal (d) none of the above

61. If two operators A and B are Hermitian, then their product (AB) is also Hermitian if and only if A and B

(a) commute (b) do not commute

(c) are non- zero (d) none of the above

62. If the wave function is well behaved, then the Hamiltonian operator for the total energy of a system is

(a) zero (b) Hermitian

(c) Non- Hermitian (d) none of the above

63. The expectation value of x for the state described by $\psi = Ax\,exp\left(-x^2/2\right)$ is

(a) A (b) $A^2/2$

(c) $A/4$ (d) 0

64. The linear momentum operator is

(a) Unitary (b) Orthogonal

(c) Orthonormal (d) Hermitian

65. $\begin{bmatrix} 2 & 3 & -1 \\ 4 & -5 & 6 \end{bmatrix}$ is a matrix of order

(a) 2×2 (b) 3×2

(c) 2×3 (d) 1×3

66. $\begin{bmatrix} 2 \\ 1 \\ 5 \end{bmatrix}$ is a column matrix of order

(a) 3×1 (b) 1×1

(c) 1×3 (d) 3×3

67 If matrices are $A=\begin{bmatrix} 1 & -2 & 3 \\ -4 & 2 & 5 \end{bmatrix}$ and $B=\begin{bmatrix} 2 & 3 \\ 4 & 5 \\ 2 & 1 \end{bmatrix}$, then AB is given by

(a) $\begin{bmatrix} 0 & -4 \\ 10 & 3 \end{bmatrix}$ (b) $\begin{bmatrix} 0 & 7 \\ 3 & 2 \end{bmatrix}$

(c) $\begin{bmatrix} 5 & 1 \\ 0 & 5 \end{bmatrix}$ (d) 0

68. Inverse of a matrix $\begin{bmatrix} 1 & -1 & 3 \\ -1 & 1 & 2 \\ 3 & 2 & -1 \end{bmatrix}$ is

(a) $\begin{bmatrix} 1/5 & -1/5 & 1/5 \\ -1 & 1 & 2 \\ 3 & 2 & -1 \end{bmatrix}$ (b) $\begin{bmatrix} 1 & -1 & 3 \\ -1 & 1 & 2 \\ 3 & 2 & -1 \end{bmatrix}$

(c) $\begin{bmatrix} 1 & -1/5 & 3 \\ -1/5 & 1 & 2 \\ 3 & 2/5 & -1 \end{bmatrix}$ (d) $\begin{bmatrix} 1/5 & -1/5 & 1/5 \\ -1/5 & 2/5 & 1/5 \\ 1/5 & 1/5 & 0 \end{bmatrix}$

69. Which of the following is/are even function ?

(a) x^3 (b) $\sin x$

(c) $\tan x$ (d) $\cos x$ and $\sec x$

70. If $f(x)=\begin{cases} 2, if\ 0 \le x \le \pi \\ x, if\ -\pi \le x \le 0 \end{cases}$ then the values of a_o and a_n in Fourier series are

(a) 0,1 (b) 1,0

(c) 0,0 (d) 1,1

71. A planet moves round the sun. At a point P, it is closest to the sun at distance r_1 and has speed v_1. At another point Q, when it is farthest from the sun at a distance r_2, what is its speed?

(a) $\frac{r_1^2 v_1}{r_2^2}$ (b) $\frac{r_1 v_1}{r_2}$

(c) $\frac{r_2^2 v_2}{r_1^2}$ (d) $\frac{r_2 v_1}{r_1}$

72. Two masses *m* and M are initially at rest at infinite distance apart. They approach each other due to gravitational interaction. What is their speed of approach at the instant when they are at a distance *d* apart?

(a) $\left(\frac{2G\left(M^2+m^2\right)^{1/2}}{d}\right)^{1/2}$ (b) $\left(\frac{2GMm}{d\left(M+m\right)}\right)^{1/2}$

(c) $\left(\frac{2G\left(M+m\right)}{d}\right)^{1/2}$ (d) $\left(\frac{GMm}{d\left(M+m\right)}\right)^{1/2}$

73. Which one of the following is the best example of an elastic collision? The elastic collision between

(a) a ball and the floor (b) a bullet and the target

(c) a truck and a car (d) molecules

74. A particle moving in the $x-y$ plane is governed by its position vector r = a sin $\omega t\ \hat{i}$ +b cos $\omega t\ \hat{j}$, where a, b and ω are positive constants and a > b. What is the trajectory of the particle?

(a) A parabola (b) A hyperbola

(c) An ellipse (d) A circle

75. A body of mass *m*, moving with velocity *u* collides elastically with another body at rest having mass *M*. If the body of mass *M* moves with velocity *v*, then the velocity of the body of mass *m* after the impact is

(a) $\frac{m-M}{m+M}u$ (b) $\frac{m-M}{m+M}v$

(c) $\frac{mu+Mv}{m+M}$ (d) $\frac{mu-Mv}{m+m}$

Direction to solve (76 - 79): In each series, look for the degree and direction of change between the numbers. In other words, do the numbers increase of decrease, and by how much?

76. Look at this series: 53, 53, 40, 40, 27, 27,….what number should come next?

(a) 14 (b) 53

(c) 12 (d) 27

77. Look at this series: 22,21,23,22,24,23,… what number should come next?

(a) 22 (b) 25

(c) 26 (d) 24

78. Look at this series: 36,34,30,28,24…… what number should come next?

(a) 20 (b) 26

(c) 23 (d) 22

79. Look at this series: 24, 23, 21, 18, …. 9, 3. What should come in between?

(a) 6 (b) 14

(c) 27 (d) 24

80. In an election between two candidates, one got 55% of the total valid votes, 20% of the votes were invalid. If the total number of votes was 7500, the number of valid votes that the other candidate got, was:

(a) 3100 (b) 2900

(c) 2500 (d) 2700

81. A fruit seller had some apples. He sells 40% apples and still has 420 apples. Originally he had

(a) 700 apples (b) 672 apples

(c) 600 apples (d) 588 apples

82. A father said to his son, "I was as old as you are at the present at the time of your birth". If the father's age is 38 years now, the son's age five years back was:

(a) 5 years (b) 14 years

(c) 33 years (d) 38 years

83. A is two years older than B who is twice as old as C. If the total of the ages of A, B and C be 27, how old is B?

(a) 11 (b) 10

(c) 8 (d) 7

84. A sum of money at simple interest amounts to Rs.815 in 3 years and to 854 in 4 years. The sum is:

(a) Rs.650 (b) Rs.700

(c) Rs.698 (d) Rs.690

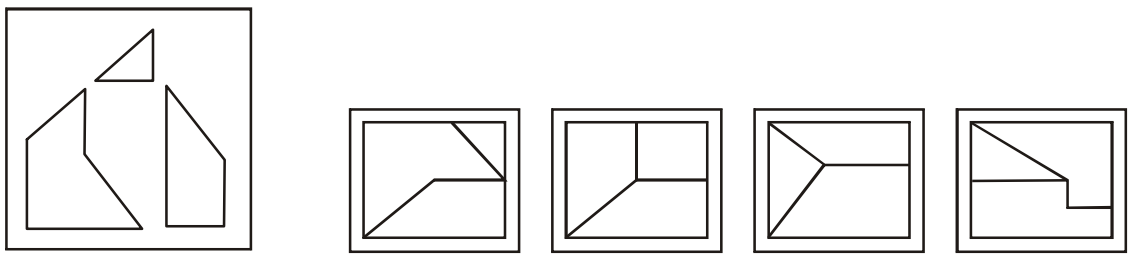
85. Which one of the following is not a prime number?

(a) 71 (b) 31

(c) 61 (d) 91

Direction to solve (86 - 87): Find out which of the figures (1), (2), (3) and (4) can be formed from the pieces given in figure (X).

86.

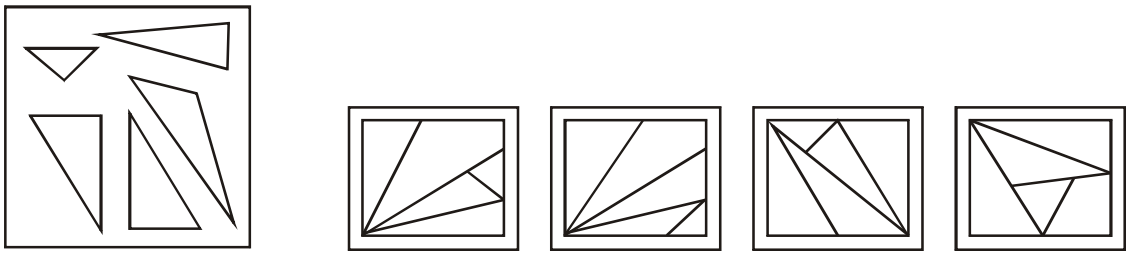


(X) (1) (2) (3) (4)

(a) 1 (b) 2

(c) 3 (d) 4

87.

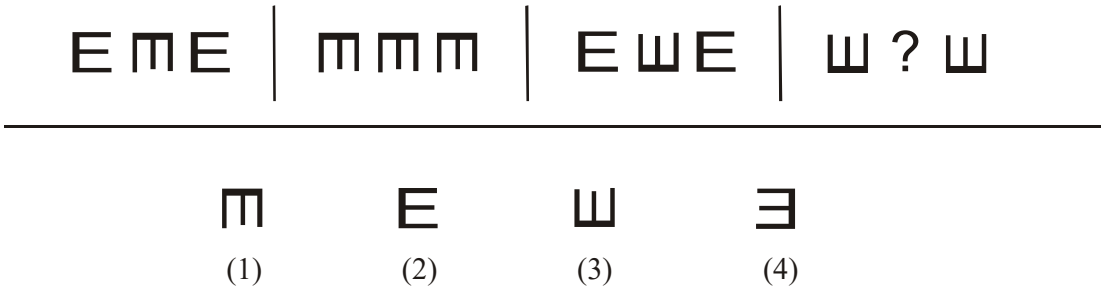


(X) (1) (2) (3) (4)

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

Direction to solve (88 - 89): Look carefully at the sequence of symbols to find the pattern. Select correct pattern.

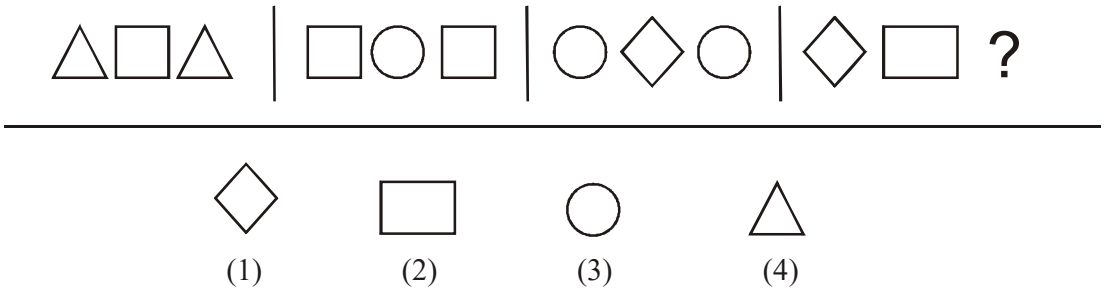
88.



(1) (2) (3) (4)

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

89.



(1) (2) (3) (4)

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

Direction to solve (90 - 91): In the following questions choose the word which is the exact opposite of the given words

90. COMMISSIONED

(a) Started (b) Closed
(c) Terminated (d) Finished

91. Mortal

(a) Eternal (b) Spiritual
(c) Immortal (d) Divine

Direction to solve (92 - 93): Some proverbs/idioms are given below together with their meanings. Choose the correct meaning of proverb/idiom.

92. To keep one's temper

(a) To be in good mood
(b) To preserve one's energy
(c) To become hungry
(d) None of these

93. To have an axe to grind

(a) To work for both sides
(b) To have no result
(c) A private end to serve
(d) None of these

94. To cry wolf

(a) To give false alarm
(b) To turn pale
(c) To listen eagerly
(d) None of these

95. A man of straw

(a) A very active person
(b) An unreasonable person
(c) A man of no substance
(d) None of these

Direction to solve (96 - 97): In questions given below, choose the one which can be substituted for the given word/sentence.

96. That which cannot be corrected.

(a) Incorrigible
(b) Unintelligible
(c) illegible
(d) None of these

97. State in which the few govern many

(a) Oligarchy
(b) Monarchy
(c) Plutocracy
(d) None of these

Direction to solve (98 - 100): Pick out the most effective word(s) from the given words to fill in the blank to make the sentence meaningfully complete.

98. Catching the earlier train will give us the……..to do some shopping

(a) Occasion
(b) Luck
(c) Chance
(d) Possibility

99. I saw a ……..of cows in the field

(a) group
(b) flock
(c) herd
(d) None of these

100. The ruling party will have to put its own house……order

(a) on
(b) in
(c) to
(d) None of these

* * * * * * *