



**NATIONAL TALENT SEARCH EXAMINATION  
(NTSE-2019) STAGE - 1  
STATE : ANDHRA PRADESH PAPER : SAT**

Date: 04/11/2018

Max. Marks: 100

**SOLUTIONS**

Time allowed: 120 mins

1. Consider the following statements

- A. India is believed to be the original home of this plant.
- B. It grows well in Black Soil.
- C. China is the largest producer of it.

Which of the following crops is mentioned in all the statements given above?

- (1) Sugarcane
- (2) Cotton
- (3) Jute
- (4) Rubber

Ans. (2)

Sol. All the given statement are correct in reference to cotton.

2. Which of the following has recorded the highest sex ratio according to Census 2011?

- (1) Pondicherry
- (2) Kerala
- (3) Haryana
- (4) Delhi

Ans. (2)

Sol. Kerala is recorded to have highest sex ratio according to census 2011.

3. Consider the following statements:

- A. Igneous rocks are responsible for the formation of black soil.
- B. Terai is a narrow belt of pebbles
- C. The newer alluvial deposits of the northern plain are called Khadar

Which of the above statements are correct?

- (1) A, B , C
- (2) B & C
- (3) A & B
- (4) A & C

Ans. (4)

Sol. In the given statements A & C are correct.

4. Out of the following states, which one receives the south west monsoon lately?

- (1) Karnataka
- (2) Maharashtra
- (3) Kerala
- (4) Gujarat

Ans. (4)

Sol. Gujarat receives South-West Monsoon lately among the given options.

5. Consider the following countries:

- A. USA
- B. Egypt
- C. Brazil
- D. Mongolia
- E. Canada
- F. Uzbekistan

Which of the above countries are smaller than India with respect to area?

- (1) B,D & F
- (2) C & D only
- (3) C& F only
- (4) A, B & F only

Ans. (1)

Sol. Egypt, Mongolia & Uzbekistan are smaller in terms of area as compared to India.

6. Black soils are generally poor in :

- (1) Calcium Carbonate (2) Phosphoric content  
(3) Manganese (4) Potash and lime

**Ans. (2)**

**Sol.** Black soil lacks in phosphoric content.

7. What were described as the "temples of modern India" by the 1st Prime Minister of India?

- (1) Dams (2) Schools (3) Railway Stations (4) Hospitals

**Ans. (1)**

**Sol.** Dams are considered as temples of modern India by first Prime Minister of India.

8. Consider the following statements:

A. 52% of the people employed in IT and Electronics Industry are women.

B. Bengaluru has emerged as the Electronic Capital of India.

Which of the above statements is/are not correct?

- (1) None of these (2) B only (3) A only (4) Both A & B

**Ans. (3)**

**Sol.** Bengaluru is the electronic capital of India.

9. The Godavari is known as the "Dakshin Ganga" because:

- (1) Of its drainage into Bay of Bengal (2) Of its origin in Western Ghats  
(3) Of its making of waterfalls (4) Of its length and area it covers

**Ans. (4)**

**Sol.** Godavari is known as Dakshin Ganga because of its length and the area it covers.

10. The biggest port of India is

- (1) Kandla Port (2) Paradwip Port (3) Kolkata Port (4) Mumbai Port

**Ans. (4)**

**Sol.** Mumbai port is biggest port of India.

11. Which type of forest are not found in Andhra Pradesh ?

- (1) Evergreen forests (2) Deciduous Forests (3) Thorn Forests (4) Mangrove Forests

**Ans. (1)**

**Sol.** Evergreen forests are not found in Andhra Pradesh.

12. Per capita consumption of which energy source is considered as an Index of development?

- (1) Solar energy (2) Petroleum (3) Natural Gas (4) Electricity

**Ans. (4)**

**Sol.** Per Capita consumption of electricity is considered as index of development.

13. Name the connecting tissue that connect muscle to the bone.

- (1) Tendon (2) Areolar tissue (3) Ligament (4) Cartilage

**Ans. (1)**

**Sol.** Tendon is a fibrous connective tissue that connects a muscle to the bone.

**14.** Area of best vision present in the retina

- (1) Sclera                      (2) Blind spot                      (3) Yellow spot                      (4) Pupil

**Ans. (3)**

**Sol.** Yellow spot is the area of best vision present in the retina.

**15.** Scientific and objective study of behaviour is called

- (1) Zoo geography    (2) Ethology                      (3) Ecology                      (4) Zoology

**Ans. (2)**

**Sol.** Ethology is the scientific and objective study of animal behaviour.

**16.** Match the item in Column-I with Column-II:

Column-I

- (a) Retinol  
(b) Thiamine  
(c) Ascorbic acid  
(d) Calciferol

Column-II

- (i) Scurvy  
(ii) Xerophthalmia  
(iii) Rickets  
(iv) Beri-beri

- (1) a - iii,      b - i,      c - iv,      d - ii  
(2) a - iv,      b - ii,      c-iii,      d-i  
(3) a - ii,      b - iv,      c-i,      d-iii  
(4) a - iv,      b - iii.      c - ii,      d - i

**Ans. (3)**

**Sol.** Retinol deficiency causes Xerophthalmia, thiamine deficiency causes beri-beri, ascorbic acid deficiency causes scurvy and calciferol deficiency causes rickets.

**17.** Granular structure present on the rough endoplasmic reticulum are

- (1) Lipids                      (2) Plastids                      (3) Lysosomes                      (4) Ribosomes

**Ans. (4)**

**Sol.** Ribosomes are the granular structures present on the rough endoplasmic reticulum.

**18.** Deficiency of Vasopressin causes a disease called

- (1) Diabetes mellitus                      (2) Diabetes insipidus  
(3) Asthma                      (4) Goiter

**Ans. (2)**

**Sol.** Deficiency of vasopressin causes diabetes insipidus.

**19.** What happens to the inhaled air as it passes through the nasal cavity ?

- (1) Moistened by mucus  
(2) Warmed to the body temperature  
(3) All of these  
(4) Filtered in the nasal cavity

**Ans. (3)**

**Sol.** As air passes through the nasal cavity it is warmed, filtered and humidified before reaching lungs.

20. Name the structure that helps the sperm in penetrating into ovum.

- (1) Middle piece            (2) Acrosome            (3) Neck            (4) Tail

Ans. (2)

Sol. Acrosome contains hydrolytic enzymes that help the sperm in penetrating into ovum.

21. Choose the correct statement from the below. Each human cell contains.

- (1) 22 pairs of autosomes and one pair of allosome  
(2) only 23 pairs of allosomes  
(3) only 23 pairs of autosomes  
(4) one pair of autosome and 22 pairs of allosomes

Ans. (1)

Sol. Human cell contains 22 pairs of autosomes and one pair of allosome.

22. The process of entry of pollutants into a food chain is known as

- (1) Bio-accumulation    (2) Bio-magnification    (3) Biosphere    (4) Biomass

Ans. (1)

Sol. : The process of entry of pollutants into a food chain is known as Bio-accumulation.

23. Which of the following is the connecting link between the aves and reptiles ?

- (1) Dinosaurs            (2) Alligator            (3) Archaeopteryx    (4) Amphioxus

Ans. (3)

Sol. Archaeopteryx is the connecting link between the Aves and Reptiles.

24. Saliva contains an enzyme called

- (1) Lipase            (2) Pepsin            (3) Ptyalin            (4) Trypsin

Ans. (3)

Sol. Ptyalin is a starch digesting enzymes present in saliva.

25. From which part of cinchona plant the alkaloid quinine is obtained?

- (1) Seeds            (2) Leaves            (3) Roots            (4) Bark

Ans. (4)

Sol. Quinine is an alkaloid obtained from bark of cinchona plant.

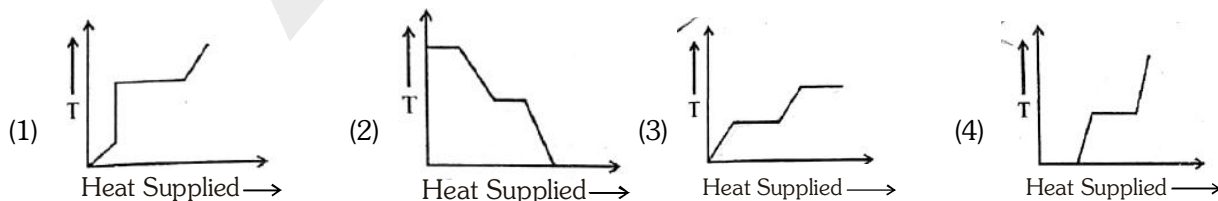
26. The nickname given to the neural apparatus of human digestive tract

- (1) Fore brain            (2) Second brain            (3) Hind brain            (4) Mid brain

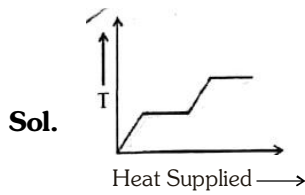
Ans. (2)

Sol. Second brain (enteric nervous system) is the nick name given to the neural apparatus of human digestive tract.

27. A block of ice at  $-10^{\circ}\text{C}$  is slowly heated and converted to steam at  $100^{\circ}\text{C}$  Which of the following curves represents the phenomenon qualitatively?



Ans. (3)



28. A small block slides without friction down on inclined plane starting from rest. Let  $S_n$  be the distance travelled

from time  $t = (n - 1)$  to time  $t = n$ . Then  $\frac{S_n}{S_{n+1}} =$

(1)  $\frac{(2n+1)^2}{2n+3}$

(2)  $\frac{2n+1}{2n-1}$

(3)  $\frac{2n-1}{2n}$

(4)  $\frac{2n-1}{2n+1}$

Ans. (4)

Sol.  $S_n = u + \frac{a}{2}(2n - 1) \dots (1)$

$S_{(n+1)} = u + \frac{a}{2}[2(n + 1) - 1]$

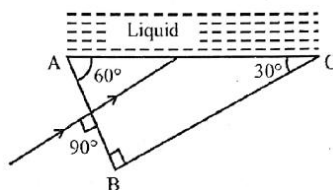
$S_{(n+1)} = u + \frac{a}{2}[2n + 1] \dots (2)$

$\frac{\text{equation(1)} S_n}{\text{equation(2)} S_{n+1}} = \frac{u + \frac{a}{2}[2n - 1]}{u + \frac{a}{2}[2n + 1]}$

$\therefore u = 0$

$\frac{S_n}{S_{n+1}} = \frac{2n-1}{2n+1}$

29. A ray of light is incident normally on face AB of a prism as shown in the figure. A liquid of refractive index  $n$  is placed on the face AC of the prism. The prism is made of glass of refractive index  $3/2$ . The limit of  $u$  for which total internal reflection takes place on face AC is



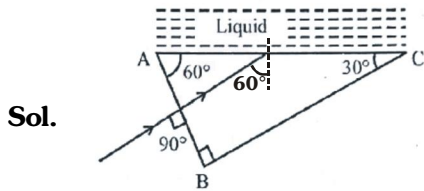
(1)  $\mu < \frac{3\sqrt{3}}{14}$

(2)  $\mu > \frac{\sqrt{3}}{2}$

(3)  $\mu < \sqrt{3}$

(4)  $\mu < \frac{3\sqrt{3}}{4}$

Ans. (4)



For total internal Reflection

$60^\circ > i_c$  ( $i_c = \text{critical angle}$ )

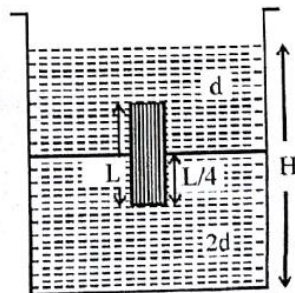
$\sin 60^\circ > \sin i_c$

$\sin 60^\circ > \frac{\mu}{3/2}$

$\frac{\sqrt{3}}{2} > \frac{\mu}{3/2}$

$\frac{3\sqrt{3}}{4} > \mu$

30. In a container (Cross-sectional Area A) a homogeneous solid cylinder of length  $L$  ( $L < H/2$  as shown in the figure), cross-sectional area  $A/5$  is immersed such that it floats with its axis vertical at the liquid-liquid surface with length  $L/4$  in the denser liquid as shown in the figure. The lower density liquid is open to the atmosphere. Then the density  $D$  of solid is given by



(1)  $4d$

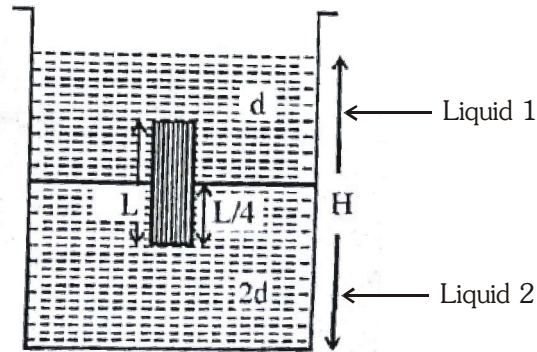
(2)  $\frac{5}{4}d$

(3)  $\frac{4}{5}d$

(4)  $\frac{d}{5}$

Ans. (2)

Sol.



Buoyant force = Buoyant force due to liquid 1 + Buoyant force due to liquid 2

$$F_B = F_{B_1} + F_{B_2}$$

$$F_B = m_1 g + m_2 g$$

$$F_B = \rho_1 v_1 g + \rho_2 v_2 g$$

$$F_B = d \times \frac{3L}{4} \times \frac{A}{5} \times g + 2d \times \frac{L}{4} \times \frac{A}{5} \times g$$

$$F_B = \frac{3LdAg}{20} + \frac{2dLA g}{20}$$

$$F_B = \frac{dLA g}{4}$$

$\therefore$  Weight of solid =  $F_B$

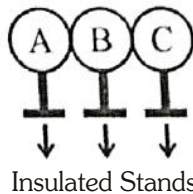
$$m_s \times g = \frac{dLA g}{4}$$

$$\rho_s \times v_s \times g = \frac{dLA g}{4}$$

$$\rho_s \times L \times \frac{A}{5} \times g = \frac{d \times LA g}{4}$$

$$\rho_s = \frac{5}{4} d$$

31. Three identical (in all aspects) metal spheres A, B and C are supported on separate insulated stands and placed in contact as shown in the figure. A charged glass rod rubbed by a silk cloth is kept near the metal sphere A, then charges on A, B and C respectively are



(1) Positive charge, Neutral, Neutral

(2) Positive charge, Neutral, Negative charge

(3) Negative charge, Positive charge, Neutral

(4) Negative charge, Neutral, Positive charge

**Ans. (4)**

**Sol.** Since the glass rod will have positive charge, if it will be brought near the 'A' sphere, There will be negative charge on A and positive charge on C, whereas B will remain neutral.

**32.** Three unequal resistors in parallel are equivalent to a resistance 1 ohm. If two of them are in the ratio of 1:2 and if no resistance value is fractional, (let them be natural numbers) the smallest of the three resistance (in ohms) is

(1) 6

(2) 4

(3) 3

(4) 2

**Ans. (4)**

**Sol.**  $\therefore$  Given  $\frac{R_1}{R_2} = \frac{1}{2}$

$$R_1 = k(1)$$

$$R_2 = k(2)$$

It is given that net parallel resistance is  $1 \Omega$

$$\frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3} = 1$$

$$\frac{1}{K} + \frac{1}{2K} + \frac{1}{R_3} = 1$$

$$\frac{1}{R_3} = 1 - \left( \frac{1}{K} + \frac{1}{2K} \right)$$

$$R_3 = \frac{2K}{2K - 3}$$

$$\therefore R_1 = K$$

$$R_2 = 2K$$

$$R_3 = \frac{2K}{2K - 3}$$

If  $K = 1$

$$R_1 = 1$$

$$R_2 = 2$$

$$R_3 = \frac{2}{-1} = -2$$

Which is not possible

If  $K = 2$

$$R_1 = 2\Omega$$

$$R_2 = 4\Omega$$



$$R_3 = \frac{4}{4-3} = 4\Omega$$

As given in question all the resistance are unequal,  $\therefore K \neq 2$

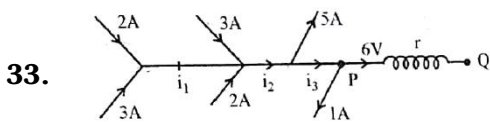
If  $K = 3$

$$R_1 = 3\Omega$$

$$R_2 = 6\Omega$$

$$R_3 = \frac{2 \times 3}{2 \times 3 - 3} = \frac{6}{6-3} = \frac{6}{3} = 2\Omega$$

$\therefore$  Smaller resistance is  $2\Omega$



Then  $r =$

(1)  $1.5\Omega$

(2)  $3\Omega$

(3)  $1\Omega$

(4)  $2.5\Omega$

**Ans. (1)**

**Sol.** Net current in the resistance is  $4A$  and given voltage is  $6V$

$$\therefore R = \frac{V}{I}$$

$$r = \frac{6}{4} = 1.5\Omega$$

**34.** On a planet whose size (including radii) is the same and mass is 4 times as that of our earth. Then the amount of work done to lift  $3\text{ kg}$  mass vertically upwards through  $3\text{ m}$  distance on that planet is ( $g$  on the surface of earth is  $10\text{ m/s}^2$ )

(1)  $360\text{ J}$

(2)  $40\text{ kg}$

(3)  $360\text{ kg}$

(4)  $40\text{ J}$

**Ans. (1)**

**Sol.** Given that  $R_{\text{planet}} = R_{\text{earth}}$

$$M_{\text{planet}} = 4M_{\text{earth}}$$

$$\therefore g_{\text{planet}} = \frac{GM_{\text{planet}}}{(R_{\text{planet}})^2}$$

$$g_{\text{planet}} = \frac{G(4M_{\text{earth}})}{R_{\text{earth}}^2}$$

$$g_{\text{planet}} = 4g$$

$$\text{Work done} = mg_{\text{planet}} \times h$$

$$= 3 \times 4 \times 10 \times 3$$

$$= 360\text{ Joule.}$$

35. The refractive index of the material of a double convex lens is 1.5 and its focal length is 5 cm, if the radii of curvature are equal, the value of the radius of curvature is \_\_\_\_ cm  
 (1) 8 (2) 5,6 (3) 5 (4) 6.5

Ans. (3)

Sol. by lens maker formula

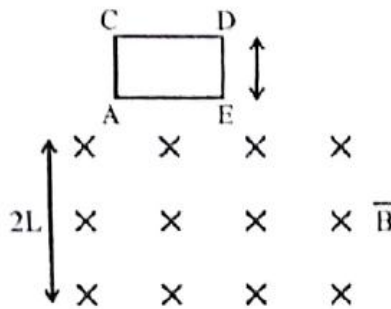
$$\frac{1}{f} = (n - 1) \left( \frac{1}{R_1} - \frac{1}{R_2} \right)$$

$$\frac{1}{f} = (1.5 - 1) \left[ \frac{1}{R} - \left( -\frac{1}{R} \right) \right]$$

$$\frac{1}{f} = \frac{1}{R}$$

$$f = R = 5 \text{ cm.}$$

36. A square coil ACDE with its plane vertical is released from rest in horizontal uniform magnetic field B of length 2L. The acceleration of the coil when coming out of the field is (Acceleration due to gravity g)



- (1) Less than g (2) Twice to g (3) Equal to g (4) More than g

Ans. (1)

Sol. By lenz's law due to electromagnetic induction acceleration will be less than g.

37. Let the smallest audible sound (nearer to total silence) is 0 dB. A sound 1000 times more powerful than the sound nearer to total silence is  
 (1) 3 dB (2) 1000 dB (3) 30 dB (4) 10 dB

Ans. (3)

Sol. When power (intensity) increases by a factor of 10 then, corresponding increase on decibel scale is '1 dB' so answer will be '30dB'.

38. Two trains with  $V_1, V_2$  speeds take 3 seconds to pass one another when going in opposite direction, but takes only 2.5 seconds if the speed of any one of it is increased by (its speed) 50%. The time would take to pass the other when going in the same direction with  $V_1, V_2$  speeds in \_\_\_\_ sec.  
 (1) 12 (2) 10 (3) 15 (4) 18

Ans. (3)

**Sol.** In case-1

$$t_1 = \frac{L_1 + L_2}{V_1 + V_2} = \frac{d}{V_1 + V_2} = 3 \quad \dots (1)$$

for case-2

$V_2$  is increased by 50%. so,

$$V_2 \rightarrow V_2 + \frac{V_2}{2} = \frac{3V_2}{2}$$

$$\text{Now } t_2 = \frac{L_1 + L_2}{V_1 + \frac{3V_2}{2}} = 2.5 \Rightarrow t_2 = \frac{d}{\frac{2V_1 + 3V_2}{2}} = \frac{5}{2}$$

$$\Rightarrow t_2 = \frac{d}{2V_1 + 3V_2} = \frac{5}{4} \quad \dots (2)$$

From equation (1) and (2)

$$\frac{t_1}{t_2} = \frac{d/V_1 + V_2}{d/2V_1 + 3V_2} = \frac{3}{5/4}$$

$$\Rightarrow \frac{2V_1 + 3V_2}{V_1 + V_2} = \frac{12}{5}$$

$$\Rightarrow 10V_1 + 15V_2 = 12V_1 + 12V_2$$

$$\Rightarrow 2V_1 = 3V_2$$

$$\Rightarrow V_1 = \frac{3V_2}{2} \quad \dots (3)$$

From equation (3) and (1)

$$t_1 = \frac{d}{v_1 + v_2} = 3$$

$$\frac{d}{\frac{3v_2}{2} + v_2} = 3 \Rightarrow \frac{d}{5\frac{v_2}{2}} = 3$$

$$\Rightarrow \frac{d}{v_2} = \frac{15}{2} \quad \dots (4)$$

For case (4)

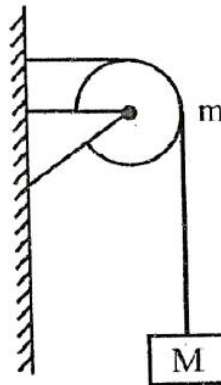
While going in same direction

$$t = \frac{L_1 + L_2}{v_1 - v_2} = \frac{d}{v_1 - v_2} = \frac{d}{\frac{3v_2}{2} - v_2} = \frac{d}{\left(\frac{v_2}{2}\right)}$$

$$t = 2 \left( \frac{d}{v_2} \right) = 2 \times \left( \frac{15}{2} \right) = 15$$

$$t = 15 \text{ secs}$$

- 39.** A string of negligible mass going over a clamped pulley of mass  $m$  supports a block of mass  $M$  as shown in the figure. The force on the pulley by the clamp is ( $g$  = acceleration due to gravity)



- (1)  $\sqrt{(M-m)^2 + m^2} g$       (2)  $\sqrt{(M-m)^2 - m^2} g$       (3)  $\sqrt{(M+m)^2 + m^2} g$       (4)  $\sqrt{(M+m)^2 + M^2} g$

**Ans. (4)**

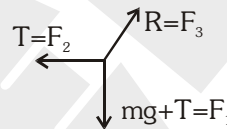
**Sol.** F.B.D of M

$$T = Mg \dots(1)$$

F.B.D of pulley m

[R = contact force of clamp on pulley]

$$F_3 = \sqrt{F_1^2 + F_2^2} = \sqrt{(mg + Mg)^2 + (Mg)^2} = \sqrt{(m+M)^2 + M^2} g$$



- 40.** Which of the following is not an oxidation reaction?

- (1) Bleaching of coloured sugarcane juice/vegetables using moist sulphur dioxide.
- (2) The black coating on silver due to formation of silver sulphide.
- (3) Rancidity of fats
- (4) The poling process involving the removal of impurities from a molten metal

**Ans. (1)**

**Sol.** The bleaching action of sulphur dioxide is due to its reducing action.

- 41.** Find the false procedure.

- (1) Roasting- Presence of oxygen - Sulphide ore - Oxide ore
- (2) Smelting- Presence of Flux - Reduction of oxide ore - Metal
- (3) Calcination - Presence of oxygen - Carbonate ore - Oxide ore
- (4) Froth Floatation - Presence of blown air - Impure sulphide ore - Increase concentration of sulphide ore

**Ans. (3)**

**Sol.** Calcination takes place in the absence of oxygen.

42. The correct set of quantum number is

(1)  $n=2, l=1, m=0, s=+\frac{1}{2}$

(2)  $n=2, l=-2, m=1, s=+\frac{1}{2}$

(3)  $n=2, l=2, m=-1, s=-\frac{1}{2}$

(4)  $n=2, l=2, m=0, s=0$

Ans. (1)

Sol.  $n=2, l=1, m=0, s=\pm\frac{1}{2}$

43.  $\text{CuO} + \text{H}_2 \rightarrow \text{Cu} + \text{H}_2\text{O}$  is a balanced chemical equation, causing reduction of CuO. What volume of  $\text{H}_2$  at STP is required to reduce 7.95 gm of CuO to give Cu and  $\text{H}_2\text{O}$  ?

(Atomic weight of Cu = 63.5 u and Atomic weight of O = 16 u)

(1) 224 lit

(2) 22.4 lit

(3) 2.24 lit

(4) 0.224 lit

Ans. (3)

Sol. Weight of copper = 7.95 gm

$$\text{Mol of copper oxide} = \frac{\text{Weight of Copper oxide}}{\text{Molar mass of copper oxide}} = \frac{7.95}{79.5} = 0.1 \text{ mol}$$

∴ So, 1 mole  $\text{H}_2$  react with 1 mol CuO

then 0.1 mol  $\text{H}_2$  react with 0.1 mole CuO

then volume of  $\text{H}_2$  gas = mol  $\times$  22.4  $\ell$

$$= 0.1 \times 22.4 \ell$$

Volume of  $\text{H}_2$  gas = 2.24  $\ell$

44. An element X belongs to 3<sup>rd</sup> period and 3<sup>rd</sup> group of the periodic table. Choose the correct statement(s) regarding it.

a. It is used in thermite process.

b. One of its allotropic is tetra atomic  $\text{X}_4$ .

c. It belongs to p-block.

d. Third most abundant element after oxygen and silicon in the earth crust.

(1) a, b and d

(2) a and b

(3) b only

(4) a, c and d

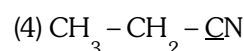
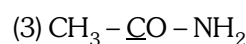
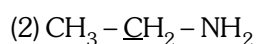
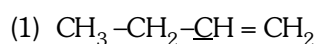
Ans. (4)

Sol. Al is used in thermite process

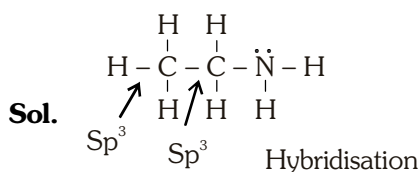
Al belong to p-block

Al is 3<sup>rd</sup> most abundant element in earth's crust.

45. Which of the following compound with underlined carbon is having  $\text{sp}^3$  hybridisation?



Ans. (2)



**46.** Find the incorrect statement.

- (1) Denatured alcohol means 100% alcohol in the form of pure ethanol.
- (2) Ethanol is a colourless liquid with characteristic of sweet odour and pure ethanol is called absolute alcohol.
- (3) 10% ethanol in gasoline (gasohol) is a good motor fuel.
- (4) Orange colour  $\text{Cr}_2\text{O}_7^{2-}$  changes bluish green  $\text{Cr}^{3+}$  during the process of oxidation of ethanol to ethanal and ethanoic acid.

**Ans. (1)**

**Sol.** Methanol or pyridine is mixed with pure ethanol for denaturing alcohol.

**47.** Ionic compounds are formed most easily when the combination is having

- (1) Low Electron Affinity, High Ionisation Energy
- (2) Low Electron Affinity, Low Ionisation Energy
- (3) High Electron Affinity, High Ionisation Energy
- (4) High Electron Affinity, Low Ionisation Energy

**Ans. (4)**

**Sol.** Ionic compounds have high electron affinity and low ionisation energy.

**48.** Refining of impure Copper with Zinc as impurity is to be done by electrolysis using anode and cathode respectively as

- |                                |                            |
|--------------------------------|----------------------------|
| (1) Pure Zinc, Pure Copper     | (2) Pure Copper, Pure Zinc |
| (3) Impure Copper, Pure Copper | (4) Impure Zinc, Pure Zinc |

**Ans. (3)**

**Sol.** Anode  $\longrightarrow$  Impure copper

Cathode  $\longrightarrow$  Pure copper

**49.** Potassium Super Oxide ( $\text{KO}_2$ ) is used in submarines because it

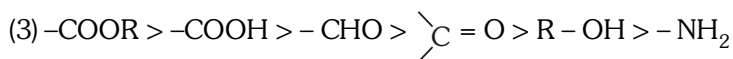
- (1) produces ozone
- (2) absorbs  $\text{CO}_2$  and decreases  $\text{O}_2$  concentration
- (3) absorbs moisture
- (4) absorbs  $\text{CO}_2$  and increase  $\text{O}_2$  concentration

**Ans. (4)**

**Sol.**  $\text{KO}_2$  absorbs  $\text{CO}_2$  and increases  $\text{O}_2$  concentration.

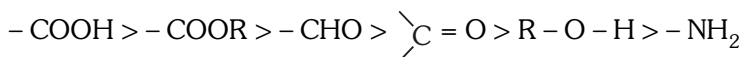
**50.** The decreasing order of priority for choosing and naming a principal characteristic group in nomenclature is

- (1)  $-\text{COOH} > -\text{CHO} > -\text{COOR} > \text{>C}=\text{O} > -\text{NH}_2 > \text{R}-\text{OH}$
- (2)  $-\text{COOR} > -\text{CHO} > -\text{COOH} > \text{>C}=\text{O} > \text{R}-\text{OH} > -\text{NH}_2$



**Ans. (4)**

**Sol.** Priority order of functional group



**51.** Arrange the elements B, Al, Mg, K in the increasing order of metallic character.

- (1)  $\text{B} < \text{Mg} < \text{Al} < \text{K}$       (2)  $\text{B} < \text{Mg} < \text{K} < \text{Al}$       (3)  $\text{B} < \text{Al} < \text{Mg} < \text{K}$       (4)  $\text{B} < \text{K} < \text{Mg} < \text{Al}$

**Ans. (3)**

**Sol.** Metallic character in the increasing order  $\text{B} < \text{Al} < \text{Mg} < \text{K}$

**52.** Which of the following sets of phenomena would increase on raising the temperature?

- a. Evaporation of liquid  
b. Sublimation of solid  
c. Solubility of solute in water.  
d. Solubility of gases in water.

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

**Ans. (1)**

**Sol.** Evaporation of liquid increases on increasing temperature. Sublimation of solid increases on increasing temperature. Solubility of solute in water would increase or decrease on increasing temperature. Solubility of gas decrease on increasing temperature.

**53.** When the period of last 4 decades is considered, which of the following statements is / are true regarding the primary sector of Indian economy ?

- A. The primary sector has lost its credit as the largest employer  
B. Primary sector continues to be the largest employer  
C. The share of primary sector in GDP has fallen drastically  
D. The share of primary sector in GDP has increased slightly

- (1) B & D      (2) B & C      (3) A & C      (4) A & D

**Ans. (2)**

**Sol.** Option B & C are true regarding primary sector of Indian economy.

**54.** International Cooperative Day is celebrated every year on the

- (1) First Saturday of July      (2) First Saturday of August  
(3) Second Saturday of July      (4) Second Saturday of August

**Ans. (1)**

**Sol.** First Saturday of July is celebrated as International Cooperative Day.

**55.** The marginal productivity of the disguised unemployed is

- (1) very high      (2) zero      (3) unmeasured      (4) very low

**Ans. (2)**

**Sol.** The marginal productivity of disguised unemployed is Zero.

**56.** Consider the following statements and select the correct answer using the code given below:

A. According to social scientists, social exclusion is a cause of poverty.

B. According to social scientists, social exclusion is a consequence of poverty.

(1) Only A is correct

(2) Only B is correct

(3) Both A and B are correct

(4) Both A and B are not correct

**Ans. (3)**

**Sol.** Option A & B are correct.

**57.** US farmers can sell the farm products at abnormally low prices because:

(1) They receive massive sums of money from the US government

(2) Production cost is very low in US

(3) They are very rich and they don't want any profits

(4) They use machines for all works of cultivation

**Ans. (1)**

**Sol.** US farmers can sell the farm product at abnormally low prices as they received massive sum of money from government.

**58.** "We have not inherited the world from our forefathers - we have borrowed it from our children"- This quote expects us :

(1) To use non-renewable resources extensively

(2) To extract more ground water

(3) To prefer sustainability of development

(4) To prefer rapid industrialisation

**Ans. (3)**

**Sol.** The following quotation is given with reference to prefer sustainability of development.

**59.** If organised sector is denoted by the code 'A' and unorganised sector by the code 'B', then which of the following statements is correct in the context of contemporary India?

(1) Most of the people want to work in 'A' and they are in 'A'

(2) Most of the people want to work in 'A' but they have to be in 'B'.

(3) Most of the people want to work in 'B' and they are in 'B'

(4) Most of the people want to work in 'B' but they have to be in 'A'.

**Ans. (2)**

**Sol.** Most of the people want to work in organized sector but they have to be in unorganised sector.

**60.** Which of the following factors is not at all related to Green Revolution?

(1) Use of HYV seeds

(2) Use of chemical fertilisers

(3) Loss of soil fertility

(4) All of these are related

**Ans. (4)**

**Sol.** All of the given options are related to Green Revolution.



**61.** Consider the following statements in the connection with the printing press invented by Gutenberg.

A. The first printed book was the Bible.

B. The new technology entirely displaced the existing art of producing books by hand

C. At first the printed books closely resembled the written manuscripts in appearance

Which of the statements given above are correct

(1) B & C

(2) A, B & C

(3) A & B

(4) A & C

**Ans. (4)**

**Sol.** Option A & C are correct in connection with printing press invented by Guttenberg.

**62.** Who was the Chairman of the Democratic Republic of Vietnam ?

(1) Nguyen

(2) Ngo Dinh Diem

(3) Bao Dai

(4) Ho Chi Minh

**Ans. (4)**

**Sol.** Ho Chi Minh was the Chairman of Democratic Republic of Vietnam.

**63.** In 19th Century the main destination(s) of Indian indentured migrants was/were

(1) Fiji and Mauritius only

(2) Fiji, Caribbean Islands and Mauritius

(3) Fiji and Caribbean Islands

(4) Fiji only

**Ans. (2)**

**Sol.** Fiji, Caribbean Islands & Mauritius were the main destination of Indian Indentured migrants.

**64.** Famous enabling act was passed in Germany in 1933. With this Hitler

(1) Became Chancellor of Germany

(2) Established socialism in Germany

(3) Became the dictator of Germany

(4) Restored the dignity of Germany

**Ans. (1)**

**Sol.** Hitler became the Chancellor of Germany when famous Enabling Act was passed in 1933.

**65.** The African word Maasai means

(1) My cattle

(2) My land

(3) My people

(4) My pasture

**Ans. (3)**

**Sol.** The African word Maasai means My People.

**66.** Consider the following statements regarding the forest policies implemented under the British rule

(A) The First Inspector General of Forests in India was a French expert appointed by the British government

(B) Shifting agriculture in Sri Lanka was called "Chena"

(C) The people of forest communities benefitted in many ways after the forest department took control of the forest

Which of the above statements is/are correct

(1) A & B

(2) B only

(3) A,B & C

(4) A & C

**Ans. (2)**

**Sol.** Option D is correct in regard to forest policies implemented under the British Rule.

**67.** In 1868 England was producing about 80 % of the food it consumed. This increased in food grain production was made possible mainly by

(1) Use of only Bio-fertiliser

(2) Radical innovations in agricultural technology

(3) Extensive use of chemical fertilisers

(4) Bringing new lands under cultivation

**Ans. (4)**

**Sol.** Bringing new land under cultivation made the food grain production increase in England during 1868.

**68.** Give the correct chronological order

- (A) Simon Commission (B) First Round Table Conference  
(C) Gandhi Irwin Pact (D) Relaunch of Civil Disobedience Movement  
(1) D, C, A, B (2) A, C, B, D (3) A, B, C, D (4) C, B, A, D

**Ans. (3)**

**Sol.** A, B, C & D is the correct chronological order of the following.

**69.** Which of the following features was not related to Stalin

- (1) Announcement of "The New Deal" (2) Collectivisation of Agriculture  
(3) Rapid Industrialisation (4) Introducing Five Year Plans

**Ans. (1)**

**Sol.** Announcement of the New Deal is not related to Stalin.

**70.** Which one of the following statements is correct

- (1) Victor Emmanuel II was proclaimed German Emperor in 1861  
(2) Victor Emmanuel II was proclaimed King of United Italy in 1871  
(3) William I was proclaimed King of United Italy in 1861  
(4) William I was proclaimed German Emperor in 1871

**Ans. (1)**

**Sol.** Option 1 is correct out of the following statement.

**71.** "A Sanyasi who had earlier been to Fiji as an indentured labourer led a peasant movement. He used to recite verses from Tulsidas Ramayana to rural audience." - Who was 'he' referred to here

- (1) Jhinguri Singh (2) Jadunandan Sharma (3) Baba Ramchandra (4) Sahajananda Saraswati

**Ans. (3)**

**Sol.** Baba Ramchandra is referred here.

**72.** The National colours of France are

- (1) Green-Gold (2) Saffron-White-Green (3) Red-Blue-Green (4) Blue-White-Red

**Ans. (4)**

**Sol.** Blue-White-Red are the National Colours of France.

**73.** If a, b, c are in A.P., then  $ax + by + c = 0$  will always pass through a fixed point whose co-ordinates are

- (1) (-1, -2) (2) (-1, 2) (3) (1, -2) (4) (1, 2)

**Ans. (3)**

**Sol.**  $ax + by + c = 0$  ... (1)

$a, b, c \rightarrow A.P$

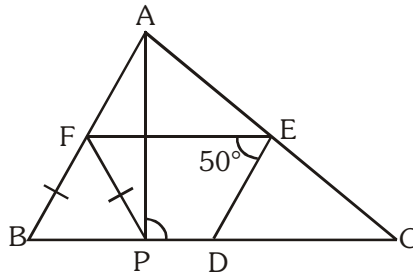
$$\Rightarrow a + c = 2b$$

$$\Rightarrow a - 2b + c = 0 \dots (2)$$

Comparing (1) and (2), we get

$$x = 1, b = -2$$

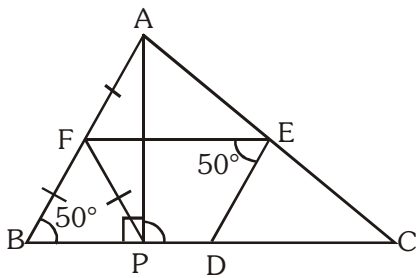
74. In  $\triangle ABC$ , D, E and F are respectively mid points of the sides BC, CA and AB and P is a point on BC such that  $AP \perp BC$ . If  $\angle DEF = 50^\circ$ , then  $\angle FPD =$



- (1)  $120^\circ$                       (2)  $110^\circ$                       (3)  $135^\circ$                       (4)  $130^\circ$

**Ans. (4)**

**Sol.**



$$FE = \frac{1}{2} BC = BD \text{ \& } FE \parallel BD \text{ (}\because \text{ Mid point theorem)}$$

$\Rightarrow$  BDEF is a Parallelogram ( $\because$  One pair of opposite sides are parallel & equal)

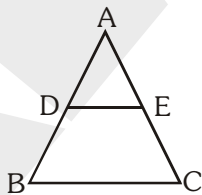
$$\Rightarrow \angle FBP = \angle FED = 50^\circ$$

$PF = BF$  (In a right angled triangle, median on hypotenuse is half of hypotenuse)

$$\Rightarrow \angle FPB = \angle FBP = 50^\circ$$

$$\Rightarrow \angle FPD = 180^\circ - \angle FPB = 130^\circ$$

75. From the adjacent figure  $\triangle ABC$ ,  $DE \parallel BC$  and  $\frac{AD}{DB} = \frac{3}{5}$ , if  $AC = 5.6$  then  $AE$  is



- (1) 9 cm                      (2) 15 cm                      (3) 6 cm                      (4) 2.1 cm

**Ans. (4)**

**Sol.**  $\triangle ADE \sim \triangle ABC$  ( $\because DE \parallel BC$ )

$$\text{Given : } \frac{AD}{DB} = \frac{3}{5} \Rightarrow \frac{AD}{AB} = \frac{3}{8}$$

$$\text{we know that } \frac{AD}{AB} = \frac{AE}{AC}$$

$$\Rightarrow \frac{3}{8} = \frac{AE}{5.6}$$

$$\Rightarrow AE = \frac{5.6 \times 3}{8} = 2.1 \text{ cm}$$

**76.** The volume of regular cylindrical wire of diameter 2 mm is 99 cubic cm, then the length of wire in metres.

- (1) 53.1                                      (2) 31.5                                      (3) 35.1                                      (4) 51.3

**Ans. (2)**

**Sol.** Volume =  $\pi r^2 h$

$$\Rightarrow 99 = \frac{22}{7} \left( \frac{1}{10} \right)^2 h$$

$$\Rightarrow \frac{99 \times 100 \times 7}{22} = h$$

$$\Rightarrow h = \frac{900 \times 7}{2} = 31.5 \text{ m}$$

**77.** If  $x < 1$ ,  $y < -1$ , then  $(x - 1, y - 3)$  lies in

- (1)  $Q_3$                                       (2)  $Q_4$                                       (3)  $Q_2$                                       (4)  $Q_1$

**Ans. (1)**

**Sol.**  $x < 1 \Rightarrow x - 1 < 0$

$y < -1 \Rightarrow y - 3 < 0$

$\Rightarrow$  3rd quadrant

**78.** If the number of observations  $n$  is even, then median is

- (1) average of  $n^{\text{th}}$  and  $(n + 1)^{\text{th}}$  observations                                      (2) average of  $\left(\frac{n}{2}\right)^{\text{th}}$  and  $\left(\frac{n-1}{2}\right)^{\text{th}}$  observations

- (3) average of  $\left(\frac{n}{2}\right)^{\text{th}}$  and  $\left(\frac{n+1}{2}\right)^{\text{th}}$  observations                                      (4) average of  $\left(\frac{n}{2}\right)^{\text{th}}$  and  $\left(\frac{n}{2} + 1\right)^{\text{th}}$  observations

**Ans. (4)**

**Sol.** Median =  $\frac{\left(\frac{n}{2}\right)^{\text{th}} \text{ observation} + \left(\frac{n}{2} + 1\right)^{\text{th}} \text{ observation}}{2}$

**79.** If  $\operatorname{cosec}\theta - \sin\theta = 4$ , then  $\sin^2\theta + \operatorname{cosec}^2\theta =$

- (1) 8                                      (2) 18                                      (3) 16                                      (4) 4

**Ans. (2)**

**Sol.**  $\operatorname{cosec}\theta - \sin\theta = 4$

squaring, we get

$$\operatorname{cosec}^2\theta + \sin^2\theta - 2 \operatorname{cosec}\theta \cdot \sin\theta = 16$$

$$\Rightarrow \operatorname{cosec}^2\theta + \sin^2\theta = 18$$

**80.** If  $\frac{x+1}{2} + \frac{y-1}{3} = 8$  and  $\frac{x-1}{3} + \frac{y+1}{2} = 9$ , then  $y =$

(1) 7

(2) 12

(3) 13

(4) 8

**Ans. (3)**

**Sol.**  $\frac{x+1}{2} + \frac{y-1}{3} = 8$

$$\Rightarrow 3x + 3 + 2y - 2 = 48$$

$$\Rightarrow 3x + 2y = 47 \quad \dots(1)$$

Also,  $\frac{x-1}{3} + \frac{y+1}{2} = 9$

$$2x - 2 + 3y + 3 = 54$$

$$\Rightarrow 2x + 3y = 53 \dots (2)$$

Adding equation (1) and (2), we get

$$5x + 5y = 100$$

$$\Rightarrow x + y = 20 \quad \dots(3)$$

Subtracting eq. (2) from (1), we get

$$x - y = -6 \quad \dots(4)$$

Now, from eq. (3) & (4), we get

$$x + y = 20$$

$$x - y = -6$$

$$\begin{array}{r} - \quad + \quad + \\ \hline \end{array}$$

$$2y = 26$$

$$\Rightarrow y = 13$$

**81.**  $3(\sin x - \cos x)^4 + 6(\sin x + \cos x)^2 + 4(\sin^6 x + \cos^6 x) =$

(1) 14

(2) 13

(3) 7

(4) 9

**Ans. (2)**

**Sol.**  $3(\sin x - \cos x)^4 + 6(\sin x + \cos x)^2 + 4(\sin^6 x + \cos^6 x)$

$$= 3(1 - 2 \sin x \cos x)^2 + 6(1 + 2 \sin x \cos x) + 4(\sin^2 x + \cos^2 x)(\sin^4 x + \cos^4 x - \sin^2 x \cos^2 x)$$

$$= 3(1 + 4 \sin^2 x \cos^2 x - 4 \sin x \cos x) + 6(1 + 2 \sin x \cos x) + 4[(\sin^2 x + \cos^2 x)^2 - 3 \sin^2 x \cos^2 x]$$

$$= 3 + 12 \sin^2 x \cos^2 x - 12 \sin x \cos x + 6 + 12 \sin x \cos x + 4 - 12 \sin^2 x \cos^2 x$$

$$= 13$$

**82.** If  $a^{x-1} = bc$ ,  $b^{y-1} = ca$ ,  $c^{z-1} = ab$  then  $xy + yz + zx$

(1)  $xyz$

(2)  $0$

(3)  $1$

(4)  $\frac{1}{x} + \frac{1}{y} + \frac{1}{z}$

**Ans. (1)**

**Sol.**  $a^{x-1} = bc \Rightarrow a^x = abc \Rightarrow a = (abc)^{1/x} \dots(1)$

$b^{y-1} = ca \Rightarrow b^y = abc \Rightarrow b = (abc)^{1/y} \dots(2)$

$c^{z-1} = ab \Rightarrow c^z = abc \Rightarrow c = (abc)^{1/z} \dots(3)$

Multiplying eq. (1), (2) and (3) we get

$$abc = (abc)^{\frac{1}{x} + \frac{1}{y} + \frac{1}{z}}$$

$$\therefore 1 = \frac{1}{x} + \frac{1}{y} + \frac{1}{z}$$

$$\Rightarrow xyz = xy + yz + zx$$

**83.** If the equation  $(k + 3)x^2 - (5 - k)x + 1 = 0$  has distinct roots, the value of  $k$  will be

(1)  $k = 1$  or  $k = 13$

(2)  $k < 13$  or  $k > 1$

(3)  $k > 12$  or  $k < 1$

(4)  $k > 13$  or  $k < 1$

**Ans. (4)**

**Sol.**  $(k + 3)x^2 - (5 - k)x + 1 = 0$

$D > 0$  ( $\because$  roots are distinct)

$\{-(5 - k)\}^2 - 4(k + 3)(1) > 0$

$25 + k^2 - 10k - 4k - 12 > 0$

$k^2 - 14k + 13 > 0$

$k^2 - 13k - k + 13 > 0$

$k(k - 13) - 1(k - 13) > 0$

$(k - 1)(k - 13) > 0$

$$\begin{array}{c} + \quad \quad \quad - \quad \quad \quad + \\ | \quad \quad \quad | \quad \quad \quad | \\ 1 \quad \quad \quad 13 \end{array}$$

$\therefore \boxed{k < 1 \text{ \& } k > 13}$

**84.** If the roots of the equation  $(b - c)x^2 + (c - a)x + (a - b) = 0$  are equal, then  $\frac{a + c}{b} =$

(1)  $4$

(2)  $2$

(3)  $3$

(4)  $1$

**Ans. (2)**

**Sol.**  $D = 0$  ( $\because$  roots are equal)

$(c - a)^2 - 4(a - b)(b - c) = 0$

$c^2 + a^2 - 2ac - 4ab + 4ac + 4b^2 - 4bc = 0$

$a^2 + c^2 + (-2b)^2 + 2ac + 2a(-2b) + 2c(-2b) = 0$

$(a + c - 2b)^2 = 0$



$$a - 3d, a - d, a + d, a + 3d$$

$$\text{Now, } a - 3d + a - d + a + d + a + 3d = 20$$

$$4a = 20$$

$$a = 5$$

$$\text{Also, } (a - 3d)^2 + (a - d)^2 + (a + d)^2 + (a + 3d)^2 = 120$$

$$a^2 + 9d^2 - 6ad + a^2 + d^2 - 2ad + a^2 + d^2 + 2ad + a^2 + 9d^2 + 6ad = 120$$

$$4a^2 + 20d^2 = 120$$

$$a^2 + 5d = 30$$

$$\text{Now, since } a = 5$$

$$(5)^2 + 5d^2 = 30$$

$$25 + 5d^2 = 30$$

$$5d^2 = 5$$

$$d^2 = 1$$

$$\therefore d = \pm 1$$

**Case I :** If  $d = 1$ , then numbers are  $5 - 3, 5 - 1, 5 + 1, 5 + 3 \Rightarrow 2, 4, 6, 8$

**Case II :** If  $d = -1$ , then numbers are  $5 + 3, 5 + 1, 5 - 1, 5 - 3 \Rightarrow 8, 6, 4, 2$

Checking in options, we get 2, 4, 6, 8

**88.** If the sum of the roots of the equation  $(x^2 - x) = \lambda(2x - 1)$  is zero, then the value of  $\lambda$  is

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

(2)  $-\frac{1}{2}$

(3) 2

(4) -2

**Ans. (2)**

**Sol.**  $x^2 - x = \lambda(2x - 1)$

$$x^2 - x(1 + 2\lambda) + \lambda = 0$$

as, sum of roots is zero

$$\Rightarrow \frac{(1 + 2\lambda)}{1} = 0$$

$$\Rightarrow \lambda = -\frac{1}{2}$$

**89.** If  $a^x = b^{y+z}$  then

(1)  $\frac{\log a}{\log b} = \frac{x}{y+z}$

(2)  $\frac{\log b}{\log a} = \frac{y+z}{x}$

(3)  $\frac{\log a}{\log b} = \frac{y+z}{x}$

(4)  $x \log a = yz \log b$

**Ans. (3)**

**Sol.**  $a^x = b^{y+z}$

by taking log both side

$$x \log a = (y + z) \log b$$

$$\frac{\log a}{\log b} = \left( \frac{y+z}{x} \right)$$

**90.** One of the factor for  $x^3 - 23x^2 + 142x - 120$  is

(1)  $x - 1$

(2)  $x + 10$

(3)  $x - 4$

(4)  $x + 12$



**Ans. (1)**

**Sol.**  $x^3 - 23x^2 + 142x - 120$

$$x^2(x - 1) - 22x(x - 1) + 120(x - 1)$$

$$(x - 1)(x^2 - 22x + 120)$$

∴ One of factor is  $(x - 1)$

**91.** If  $(a, 0)$ ,  $(0, b)$  and  $(1, 1)$  are collinear, then  $\frac{1}{a} + \frac{1}{b} =$

(1) 2

(2) 1

(3) 3

(4) 4

**Ans. (2)**

**Sol.**  $(a, 0)$ ,  $(0, b)$ ,  $(1, 1)$

area of triangle = 0 ( $\because$  points are collinear)

$$\Rightarrow a(b - 1) + 0(1 - 0) + 1(a - b) = 0$$

$$\Rightarrow ab - a - b = 0$$

$$\Rightarrow ab = a + b$$

$$\Rightarrow 1 = \frac{1}{a} + \frac{1}{b}$$

**92.** 14 cards numbered 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18 are placed in a box and mixed thoroughly. If a card is drawn from the box, then probability that the number on the card divisible by 3 or 2 is

(1)  $\frac{12}{14}$

(2)  $\frac{9}{14}$

(3)  $\frac{4}{14}$

(4)  $\frac{5}{14}$

**Ans. (2)**

**Sol.** 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18

Total numbers divisible by 2 or 3 = 9

$$P(E) = \frac{9}{14}$$

**93.** In India the Prime Minister is :

(1) The head of the State

(2) None of these

(3) The Head of the Government

(4) The Head of the State as well as the Government

**Ans. (3)**

**Sol.** In India Head of the Government is Prime Minister.

**94.** Four statements are given below to support the argument "Democracy is the best form of government". Which one of the is not correct?

(1) Democracy promotes equality among citizens

(2) Democracy enhances the dignity of citizens

(3) Democracy offers better chances of a good decision

(4) Mistakes can never be made in democracy

**Ans. (4)**

**Sol.** Mistakes are bound to take place in democracy also.

**95.** At present, 'Right to Property' is a:

- (1) Constitutional Right      (2) Human Right      (3) Fundamental Right      (4) Natural Right

**Ans. (1)**

**Sol.** Right to property is a Constitutional Right.

**96.** When all the democracies and dictatorships for the 50 years between 1950 to 2000 are considered:

- (1) Democracy have very higher rate of economic growth  
(2) Both the dictatorships as well as the democracies have equal rate of economic growth  
(3) Democracies have slightly higher rate of economic growth  
(4) Dictatorships have slightly higher rate of economic growth

**Ans. (4)**

**Sol.** Between 1950 to 2000 dictatorships have slightly higher rate of economic growth as compare to democracies.

**97.** As long as there are tears and sufferings, so long our work is not be over' - Who spoke these words in his/her speech to the Constituent Assembly?

- (1) Sarojani Naidu      (2) Dr. B R Amedkar  
(3) Jawaharlal Nehru      (4) Mahatma Gandhi

**Ans. (3)**

**Sol.** "As long as there are tears. ...." Is the famous speech given by Jawaharlal Nehru.

**98.** Which of the states has its own Constitution?

- (1) Jammu & Kashmir      (2) Nagaland      (3) Gujarat      (4) None of these

**Ans. (1)**

**Sol.** Jammu & Kashmir has its own Constitution.

**99.** A Party was recognised as a State Party after General Elections to the Legislative Assembly of a State. It secured 6% of the total votes. In addition to this, it must have won at least:

- (1) Four seats      (2) Three seats      (3) Two seats      (4) One seats

**Ans. (3)**

**Sol.** A recognised state party has to secure at least 6% of total votes & at least two seats in legislative assembly election.

**100.** Which of the following statements is/are correct with reference to Election Commission (EC) of India?

- A. The government officers works under the control of EC and not the government when they are on election duty  
B. EC implements the Code of Conduct and punishes any candidate or party that violates it  
C. The Chief Election Commissioner is not answerable to the President or the government.  
D. The Chief Election Commissioner is appointed by the President of India

- (1) C only      (2) A, B, C & D      (3) B, C & D      (4) B only

**Ans. (2)**

**Sol.** All the given statements are correct with reference to Election Commissioner of India.