NATIONAL TALENT SEARCH EXAMINATION (NTSE-2021) STAGE-1

STATE : GUJARAT PAPER : SAT

Date: 14/02/2021

Max. Marks: 100 **SOLUTIONS** **Time allowed: 120 mins**

1. Which of the following is not an irrational number?

(1) $\sqrt{2}$ (2) π (3) 0.101101110 (4) $\frac{3}{5}$

Ans. ***(3, 4)***

Sol. Rational number:-A number is called rational if it can be expressed in the form p/q where p and q are integers and $q \neq 0$.

therefore, option (3) and (4) both are correct

2. If x = –1 then find the remainder for the given polynomial $5x - 4x^2 \quad 3$.

(1) 6 (2) – 6 (3) 2 (4) 4

Ans. ***(2)***

Sol. Polynomial $5x - 4x^2 \quad 3$

Put the value of x = –1

$5(-1) - 4(-1)^2 \quad 3 \quad -5 - 4 \quad 3 \quad -9 \quad 3 \quad -6$

3. A Greek mathematician was the first to give theorem is -

(1) Euclid (2) Pythagorus (3) Thales (4) Ayrabhatt

Ans. ***(2)***

Sol. A Greek mathematician was the first to give theorem is Pythagorus.

4. What is the formula for total surface area of hemisphere?

(1) $3\pi r^2$ (2) $2\pi r^2$ (3) $4\pi r^2$ (4) πr^2

Ans. ***(1)***

Sol. Total surface area of hemisphere is $3\pi r^2$,

5. The perimeter of a triangle is 32 cm and its two sides are 8 cm and 11 cm then find the area of the triangle.

(1) $16\sqrt{30}\ cm^2$ (2) $8\sqrt{30}\ cm^2$ (3) $4\sqrt{30}\ cm^2$ (4) $2\sqrt{30}\ cm^2$

Ans. ***(2)***

Sol. Let the sides of the given triangle are a, b and c and its perimeter be 2s.

Let a = 8cm, b = 11cm,

2s = 32cm

$\Rightarrow$ s = 16 cm

$a + b + c = 2s \Rightarrow 8 + 11 + c = 32$

c = 32 –19 = 13 cm

$s - a = 16 - 8 = 8cm$

$s - b = 16 - 11 = 5$ cm

$s - c = 16 - 13 = 3$ cm

By heron's formula area of

$\Delta = \sqrt{s(s-a)(s-b)(s-c)}$

$ar(\Delta) = \sqrt{16 \times 8 \times 5 \times 3} = \sqrt{8 \times 2 \times 8 \times 5 \times 3}$ $8\sqrt{30}cm^2$

6. If H.C.F.(306,657) = 6 then L.C.M.(306,657)

(1) 22338 (2) 33507 (3) 32402 (4) 20512

Ans. ***(2)***

Sol. Given that HCF = 6 and the numbers are 306 and 657 .

LCM = ?

We know that LCM $\times$ HCF = product of two numbers

$\Rightarrow$ LCM $\times 6 = 306 \times 657$

$\Rightarrow$ LCM = $\frac{306 \times 657}{6}$ $\frac{201042}{6}$ 33507 .

7. If $p(x) = 2x^3 - 5x^2 - 14x$ 8 and its two zeroes are 4 and – 2, then the third zero is ___.

(1) $\frac{1}{2}$ (2) $\frac{3}{2}$ (3) 2 (4)- 6

Ans. ***(1)***

Sol. $p(x) = 2x^3 - 5x^2 - 14x$ 8

Let three zeroes be α, β, γ

Product of three zeroes = $\frac{-d}{a} = \frac{-8}{2}$

Given Product of two zeroes = –8

$\alpha\beta\gamma = -4$

$-8 \times \gamma = -4$

$\gamma = \frac{-4}{-8}$ $\frac{1}{2}$

8. The sum and product of a quadratic polynomial are 0 and $\sqrt{5}$ respectively, then quadratic polynomial is _____.

(1) $x^2 - \sqrt{5}$ 0 (2) $\sqrt{5}x^2$ $\sqrt{5}$ 0 (3) x^2 $\sqrt{5}x$ 0 (4) x^2 $\sqrt{5}$ 0

Ans. ***(4)***

Sol. If α β be the zeros of the quadratic polynomial ,then

$(x - \alpha)(x - \beta)$ is the quadratic polynomial.

Thus, $(x - \alpha)(x - \beta)$ is the polynomial.

$= x^2 - \alpha x - \beta x + \alpha\beta$

$= x^2 - x(\alpha + \beta) + \alpha\beta$ (i)

Given $(\alpha + \beta) = 0$, $\alpha\beta = \sqrt{5}$

Now putting the value of $(\alpha+\beta)$, $\alpha\beta$ in equation (i) we get,

$x^2 - x(0) + \sqrt{5} = x^2 + \sqrt{5} = 0$

9. $0.2x + 0.3y = 1.3, 0.4x + 0.6y = 2.6$ has _____ solutions.

(1) No (2) Unique (3) Infinite (4) Two

Ans. ***(3)***

Sol. $\frac{a_1}{b_1}\ \frac{a_2}{b_2}\ \frac{c_1}{c_2}$ is the condition for infinitely many solutions.

$\frac{0.2}{0.4}\ \frac{0.3}{0.6}\ \frac{1.3}{2.6}$

$\frac{1}{2}\ \frac{1}{2}\ \frac{1}{2}$

10. The semi perimeter of a rectangle garden is 36 m. Its length is 4 m more than its breadth. The length of the garden is _____m

(1) 20 (2) 16 (3) 18 (4) 36

Ans. ***(1)***

Sol. Let the width of the garden =x metre

Then length=(x+4) metre

Half perimeter =36 m

So perimeter of garden =(2×36)=72 metres

According to the question

$\Rightarrow 2(l + b)=72$

$\Rightarrow 2(x + x + 4)=72$

$\Rightarrow 2(2x + 4) = 72$

$\Rightarrow 4x + 8 = 72$

$\Rightarrow 4x = 64$

$\Rightarrow x = 16$ metres

Hence,the width of the garden =16 metres

The length of the garden =(16+4)=20 metres

11. Which term of A.P. 21, 18, 15, _____ is –81?

(1) 33 (2) 35 (3) 32 (4) 15

Ans. ***(2)***

Sol. The series is 21,18,15,...

$a = 21, d = -3$

$a_n = -81, a_n = a+(n-1)d$

$-81 = 21+(n-1)(-3)$

$-81 - 21 = -3(n - 1)$

$102 = 3(n - 1)$

$n - 1 = 34$

$n = 34 + 1 = 35$

therefore 35th term of the A.P. is –81.

12. $7\ \ 10\frac{1}{2}\ \ 14\ \ .....\ \ 84\ \ \_\_\_\_\_$

(1) $1046\frac{1}{2}$ (2) $1049\frac{1}{2}$ (3) 523 (4) $625\frac{1}{2}$

Ans. ***(1)***

Sol. In given series of AP first term a = 7, common difference d = $10\frac{1}{2}-7=\frac{21}{2}-7\quad\frac{7}{2}$ and last term l = 84

Since, $l = a+(n-1)d$

$\Rightarrow 84=7+(n-1)\frac{7}{2}$

$\Rightarrow 84-7=(n-1)\frac{7}{2}$

$\Rightarrow 77=(n-1)\frac{7}{2}$

$\Rightarrow 77\times\frac{2}{7}=n-1$

$\Rightarrow 22=n-1$

$\Rightarrow n=23$

Since,

$S_n \quad \frac{n}{2}(a \quad l)$

$S_n \quad \frac{23}{2}(7 \quad 84)$

$S_n = 91\times\frac{23}{2}$

$S_n \quad \frac{2093}{2}$

$S_n \quad 1046\frac{1}{2}$

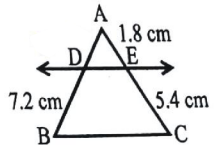
13. In ΔABC, $DE \parallel BC$ then AB = _____cm.

(1) 1.2

(2) 0.3

(3) 2.4

(4) 9.6



Ans. ***(4)***

Sol. Let AD be x cm.

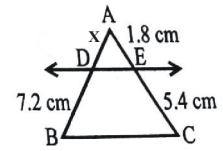
By BPT

$\frac{AD}{DB} \quad \frac{AE}{EC}$

$\frac{x}{7.2} \quad \frac{1}{3}$

$x \quad 2.4$

$AB \quad 2.4 \quad 7.2 \quad 9.6$



14. Points (5, –6) and (–1, –4) joining the line segment is divided by points on Y axis in ratio_____. (According to gujarati medium paper in this question value of coordinates of point was asked)

(1) $\left(0,\frac{-13}{3}\right)$ (2)(0, –9) (3) $\left(0,\frac{13}{3}\right)$ (4) (–9, 0)

Ans. ***(1)***

Sol. Let the line segment joining points AB where coordinates of A(5, –6) and B(–1, –4) is divided at point P(0, Y) by y – axis in ratio m : n

$\therefore x \quad \frac{mx_2 \quad nx_1}{m \quad n}$ and $y \quad \frac{my_2 \quad ny_1}{m \quad n}$

Here, $(x, y) = (0, y)$; $(x_1, y_1) = (5, -6)$ and $(x_2, y_2) = (-1, -4)$

So, $0 \quad \frac{m(-1) \quad n(5)}{m \quad n}$

$0 = -m \quad 5n$

$\Rightarrow m \quad 5n$

$\Rightarrow \frac{m}{n} \quad \frac{5}{1}$

Hence, the ratio is 5 :1 and the division is internal.

Now,

$y \quad \frac{my_2 \quad ny_1}{m \quad n}$

$\Rightarrow y \quad \frac{5(-4)+1(-6)}{5 \quad 1} \quad \frac{-20-6}{6} \quad \frac{-26}{6} \quad \frac{-13}{3}$

Hence, the coordinates of the points of division is $\left(0, \frac{-13}{3}\right)$

15. (2, –5) and (–2, 9)are equidistant, then points on X – axis are _____.

(1) (–7, 0) (2) (0, –7) (3) (–9, 0) (4) (0, –9)

Ans. ***(1)***

Sol. Since point on x–axis, then coordinate of the point is (x, 0).

According to the question this point (x, 0) is equidistant from the points (2, –5) and (–2, 9).

That is, distance between (x, 0) and (2, –5) = distance between from (x, 0) and (–2, 9).

$\sqrt{(2-x)^2+(-5-0)^2} = \sqrt{(-2-x)^2+(9-0)^2}$

$\Rightarrow (2-x)^2+(-5)^2 = (-2-x)^2 \quad 9^2$

$\Rightarrow 4-4x \quad x^2 \quad 25 \quad 4 \quad 4x \quad x^2 \quad 81$

$\Rightarrow 8x = 25-81$

$\Rightarrow 8x = -56$

$\Rightarrow x = -7$

So, point is (–7, 0)

16. A girl is moving away with velocity of 1.2 m/s from the base of an electric pole. Height of the girl is 90 cm. If electric pole is 3.6 cm(3.6 m given in gujarati medium paper) high from the surface of earth then after 4 seconds the length of the shadow will be _____m.

(1) 2.8 (2) 4.4 (3) 1.6 (4) 4.2

Ans. ***(3)***

Sol. Let the girl be at point D on the ground from the lamp post after 4 seconds. Therefore,

AD=1.2 m/sec × 4 sec = 4.8 m = 480 cm

Electric pole is 3.6m = 360 cm

Suppose the length of the shadow of the girl be x cm when she is at position D. Therefore,

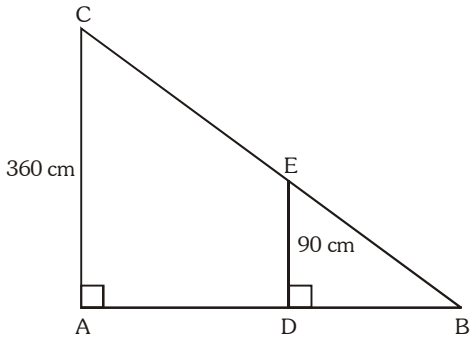
BD = x cm

Now, In ΔBDE and ΔBAC,

∠BDE = ∠BAC (Both are 90°)

∠DBE = ∠ABC (Common)

Thus, ΔBDE ~ ΔBAC (AA similarity)



$\frac{BE}{BC} \quad \frac{DE}{AC} \quad \frac{BD}{AB}$

(Corresponding sides are proportional)

$\frac{90}{360} \quad \frac{x}{480 \quad x}$

$\Rightarrow \frac{1}{4} \quad \frac{x}{480 \quad x}$

$\Rightarrow 480 \quad x \quad 4x$

$\Rightarrow 4x - x \quad 480$

$\Rightarrow 3x \quad 480$

$\Rightarrow x \quad 160$

Hence length of her shadow after 4 seconds is 160 cm = 1.6 m.

17. Which of the following is not a measure of central tendency?

(1) Mean (2) Range (3) Median (4) Mode

Ans. ***(2)***

Sol. Mean, Median and Mode are measure of central tendency. So answer is Range.

18. If median is 15.5 and mean is 10.2 then mode is _____.

(1) 66.9 (2) 46.5 (3) 20.4 (4) 26.1

Ans. ***(4)***

Sol. Mode = 3 Median – 2 mean

Mode = $3 \times 15.5 - 2 \times 10.2$

Mode = 46.5 – 20.4

Mode = 26.1

19. If a dice is thrown once, the probability of getting an indivisible number is _____.

(1) $\frac{1}{2}$ (2) $\frac{2}{3}$ (3) $\frac{5}{6}$ (4) $\frac{1}{6}$

Ans. ***(1)***

Sol. A dice total outcomes is 6

Indivisible number(Prime number) = 2, 3, 5

Probability = $\frac{3}{6} \quad \frac{1}{2}$

20. If $P(\overline{E})$ 0.95 , then $P(E)$ =_____.

(1) 0.15 (2) 0.05 (3) 0.25 (4) 0.01

Ans. ***(2)***

Sol. $P(E) + P(\overline{E}) = 1$

$P(E) + 0.95 = 1$

$P(E) = 1 - 0.95 = 0.05$

21. If solid carbon dioxide is kept at 1 atmospheric pressure then what will be its physical state?

(1) Liquid (2) Solid (3) Gas (4) Liquid and Gas

Ans. ***(3)***

Sol. At 1 atm pressure, solid CO_2 exists in gaseous state.

22. Which technique is used in pathology to examine blood and urine samples ?

(1) Centrifugation (2) Sublimation (3) Filtration (4) Evaporation

Ans. ***(1)***

Sol. Centrifugation is used in pathology to examine blood and urine samples

23. Latin name 'Kalium' is derived from the origin of which element ?

(1) Sodium (2) Potassium (3) Copper (4) Iron

Ans. ***(2)***

Sol. Latin name 'Kalium' is derived from the origin of Potassium

24. Which of the following is accountable for concentrated mass of an atom ?

(1) Proton (2) Electron (3) Nucleus (4) Neutron

Ans. ***(3)***

Sol. Nucleus is accountable for concentrated mass of an atom as it contains both protons and neutrons.

25. Which of the following molecules is known as " energy currency " of a cell?

(1) DNA (2) ATP (3) RNA (4) Amino acid

Ans. ***(2)***

Sol. ATP (Adenosine triphosphate) is called energy currency of the cell.

26. What connects two successive bones?

(1) Tendon (2) Cartilage (3) Ligaments (4) Nucleus

Ans. ***(3)***

Sol. Ligament is the fibrous connective tissue that connects two successive bones.

27. Which of the following belongs to phylum coelentrata?

(1) Spongilla (2)Planaria (3) Hydra (4) Sycon

Ans. ***(3)***

Sol. Hydra belongs to phylum Coelenterata.

28. A body travels 16m in 4s, then travels another 16m in 2s. What will be the speed of the body?

(1) 5.33 ms^{-1} (2) 5.2 ms^{-1} (3) 5.33 ms (4) 12 ms^{-1}

Ans. ***(1)***

Sol. Distance = 16 m + 16 m = 32 m

Time = 6 s

Speed = distance / time = 32 / 6 = 5.33 m/s

29. What is the S.I. unit of momentum?

(1) kg ms^{-2} (2) kg ms (3) kg ms^{-1} (4) kg m

Ans. (3)

Sol. Momentum, p = mv. So, its SI unit is kg ms^{-1}.

30. Who has discovered value of G with the help of sensitivity balance?

(1) Henry Cavendish (2) Newton (3) Archimedes (4) Purkinje

Ans. (1)

Sol. Henry Cavendish has discovered value of G with the help of sensitivity balance.

31. $E_K = \frac{1}{2} mv^2$ shows which type of energy of a body?

(1) Potential energy (2) Nuclear energy (3) Mechanical energy (4) Kinetic energy

Ans. (4)

Sol. $E_K = \frac{1}{2} mv^2$ is the formula of kinetic energy.

32. Which part of human ear converts vibrations into electrical signal?

(1) Hammer (2) Cochlea (3) Anvil (4) Auditory nerve

Ans. (2)

Sol. Cochlea converts vibrations of sound into electrical signal in human ear.

33. Which organism causes sleeping sickness?

(1) SARS (2)Trypanosoma (3) Roundworm (4) Leishmania

Ans. (2)

Sol. Sleeping sickness is caused by Trypanosoma genus which is a protozoan.

34. What is the range of temperature on moon?

(1) – 180 °C to 100 °C (2) – 190 °C to 110 °C (3) – 90 °C to 110 °C (4) – 180 °C to 110 °C

Ans. (2)

Sol. Range of temperature on moon is – 190 °C to 110 °C.

35. Which of the following is not used as a fodder in animal husbandry?

(1) Barseem (2) Sudan (3) Oat (4) Sugarcane

Ans. (4)

Sol. Sugarcane is mainly not used as a fodder in animal husbandry.

36. Which one of the following steps is not seen during a chemical reaction?

(1) Change in physical state (2) Evolution of a gas

(3) Change in total mass of reactants and products (4) Change in temperature

Ans. (3)

Sol. In any chemical reaction the mass is always conserved i.e. the total mass of reactants is equal to the total mass of products.

37. Thermal decomposition of a compound X gives a product which is used in manufacturing of cement. What is X?

(1) CaO (2) $Ca(OH)_2$ (3) $Ca(HCO_3)_2$ (4) $CaCO_3$

Ans. ***(4)***

Sol. X is $CaCO_3$.$CaCO_3$ on thermal decomposition produces CaO and CO_2.CaO(quick lime) is used in manufacturing of cement.

$$CaCO_3 \xrightarrow{\Delta} CaO + CO_2$$

38. Which compound cannot be used by a farmer to maintain neutrality of acidic soil?

(1) Quick lime (2) Gypsum (3) Slaked lime (4) Chalk

Ans. ***(2)***

Sol. To maintain the neutrality of acidic soil, a basic substance must be used. Quick lime(CaO), slaked lime($Ca(OH)_2$), chalk ($CaCO_3$) are basic in nature. Gypsum is neutral . Hence it can't be used to neutralize the acidic soil.

39. Which indicator will be used by a visually impaired child to distinguish between an acid or a base ?

(1) Turmeric powder (2) Petunia leaves (3) Vanilla essence (4) Litmus paper

Ans. ***(3)***

Sol. Vanilla essence is an olfactory indicator while others are visual indicators.Hence a visually impaired child can use vanilla essence to distinguish between an acid or a base.

40. Which of the following is not a true statement?

(i) If pH of the mouth exceeds than 5.5 it leads to the formation of cavity in teeth.

(ii) Milk of magnesia is an antacid

(iii) The sting of ant contains methanoic acid.

(iv) If pH of rain water is less than 5.6 it is termed as acid rain.

(1) Only statement (i) (2) Statement (i) and (iv) (3)Only statement (iii) (4) Only statement (iv)

Ans. ***(1)***

Sol. If pH of the mouth falls below 5.5, it leads to the formation of cavity in teeth. Hence only statement (i) is incorrect. Rest all are correct statements.

41. Which is poor conductor of heat?

(1) Silver and copper (2) Lead and copper (3) Gallium and silver (4) Lead and mercury

Ans. ***(4)***

Sol. Lead and mercury are poor conductors of heat

42. Sulphide ore is heated strongly in the presence of air. It is converted into ____.This technique is called ____.

(1) Oxide, calcination (2) Oxide, reduction

(3) Carbonate, calcinations (4) Carbonate, reduction

Ans. ***(2)***

Sol. Sulphide ore is heated strongly in the presence of air. It is converted into oxide.This technique is called roasting.

43. Which of the following is not a true statement regarding purification through electrolysis ?

(i) Pure metal is deposited on cathode.

(ii) Basic metallic compound is used as electrolyte for electrolytic decomposition.

(iii) Solid impurities are settled down as cathode mud.

(iv) Pure metal is deposited on anode

(1) Only statement (i) (2) Only statement (iii) and (iv)

(3) Statement (ii) and statement (iii) (4) Only statement (iv)

Ans. ***(2)***

Sol. During the process of electrolytic refining, pure metal is deposited at the cathode and the insoluble impurities settle down as anode mud .Therefore statements (iii) and (iv) are incorrect.

44. What is the correct sequence of excretion of urine in our body?

(1) Kidney tubule → Ureter → Urinary bladder → Urethra

(2) Kidney tubule → Ureter → Urethra → Urinary bladder

(3) Urinary bladder → Kidney tubule → Ureter → Urethra

(4) Kidney tubule → Urinary bladder → Urethra → Ureter

Ans. ***(1)***

Sol. The correct sequence of excretion of urine in our body is Kidney tubule → Ureter → Urinary bladder → Urethra

45. Which liquid compound acts as a respiratory pigment in human body?

(1) Haemocyanin (2) Lymphocytes (3) Haemoglobin (4) Thrombocytes

Ans. ***(3)***

Sol. Hemoglobin is the respiratory pigment in human body that carries respiratory gases.

46. The part of your diet that is converted into energy is stored in which form?

(1) Glycogen (2) Protein (3) Starch (4) Fatty acid

Ans. ***(1)***

Sol. Glucose which is the part of our diet , is stored in the form of Glycogen in liver in human body.

47. Which endocrine gland secretes a hormone to control blood sugar level in human body?

(1) Pituitary gland (2) Thyroid gland (3) Adrenal gland (4) Pancreas

Ans. ***(4)***

Sol. Pancreas is the gland that secretes hormones, insulin and glucagon. These hormones controls the sugar level in our body.

48. Involuntary activities like blood-pressure, secretion of saliva and vomiting are controlled by which part of hindbrain?

(1) Pons Varolii (2) Cerebellum (3) Medulla (4) Spinal cord

Ans. ***(3)***

Sol. Medulla oblongata which the part of hind brain is responsible for controlling involuntary activities like blood-pressure, secretion of saliva and vomiting.

49. Which of the following statement is not true?

(i) In animals, control and co-ordination take place through muscular and nervous tissue.

(ii) The long thread like structure of the neuron is called dendrites.

(iii) The space between two neurons is called synapse.

(iv) The small extension of neurons is called axon.

(1) Statement (ii) and (iv) (2) Statement (i) and (iii)

(3) Statement (i) and (ii) (4) Statement (iii) and (iv)

Ans. ***(1)***

Sol. Statement (ii) and (iv) are incorrect. Neurons contains short thread like processes called dendrites and a long process called axon.

50. What is the speed of light in vacuum?

(1) 3×10^8 km/s (2) 3×10^5 m/s (3) 3×10^8 cm/s (4) 3×10^5 km/s

Ans. ***(4)***

Sol. Speed of light in vacuum is 3×10^8 m/s which is equal to 3×10^5 km/s.

51. What is the correct formula to calculate the magnification (m) of lens and mirror?

(1) $\frac{\text{height of the object}}{\text{height of the image}}$ (2) $\frac{\text{Object distance}}{\text{image distance}}$

(3) $\frac{\text{height of the image}}{\text{height of the object}}$ (4) height of the object x height of the image

Ans. ***(3)***

Sol. Magnification (m) of lens and mirror = $\frac{\text{height of the image}}{\text{height of the object}}$

52. Where is an object kept in front of a convex lens to obtain a virtual and erect image?

(1) Between F and O (2) Infinity (3) Between F and 2F (4) On 2F

Ans. ***(1)***

Sol. Object should be kept between O and F in front of a convex lens to obtain a virtual and erect image.

53. Which of the following is not a correct formula?

(1) $I = \frac{Q}{t}$ (2) $V = \frac{W}{Q}$ (3) $V = IR$ (4) $H = IR^2t$

Ans. ***(4)***

Sol. The correct formula to find heat energy is $H = I^2Rt$

54. In which of the following device conversion of electrical energy into heat energy is not required?

(1) Electric iron (2) Electric oven (3) Electric motor (4) Electric toaster

Ans. ***(3)***

Sol. In electric iron, electric oven and electric toaster, electrical energy is converted into heat energy. In electric motor, electrical energy is converted into mechanical energy.

55. What is correct about a trigonal prism of glass?

(1) Three square bases and two rectangular lateral sides

(2) Two triangular bases and three rectangular lateral sides

(3) Two square bases and three triangular lateral sides

(4) Three triangular bases and two rectangular lateral sides

Ans. ***(2)***

Sol. Trigonal prism of glass has two square bases and three triangular lateral sides.

56. Which of the following occurs due to atmospheric refraction?

(1) (i) Twinkling of stars (ii) Advance sunrise and late sunset

(2) (i) Brown colour of clear sky (ii) Persistence of red colour during sunrise and sunset

(3) (i) Formation of rainbow (ii) Tyndall effect

(4) (i) Twinkling of stars (ii) Brown colour of clear sky

Ans. ***(1)***

Sol. Twinkling of stars and advance sunrise and late sunset occur due to atmospheric refraction.

57. What generates ocean thermal energy?

(1) accumulation of energy due to ocean currents (2) difference in pressure of various levels of sea

(3) difference in temperature of various levels of sea (4) occurrence of waves in sea (tides)

Ans. ***(3)***

Sol. Difference in temperature of various levels of sea generates ocean thermal energy.

58. For manufacture of solar cell and solar panel which elements are used in sequence to join internal parts of cell?

(1) Copper and silver (2) Silver and silicon (3) Silicon and silver (4) Silicon and aluminium

Ans. ***(1)***

Sol. For manufacture of solar cell and solar panel, Copper and silver are used in sequence to join internal parts of cell.

59. Which of the following groups is biodegradable?

(1) Grass, wood, and plastic (2) Grass, flowers and leather

(3) Fruit peels,bleaching powder and PVC (4) Cake, polythene and glass

Ans. ***(2)***

Sol. Grass, flowers and leather are biodegradable substances.

60. Two ends of an unknown resistor are connected to 12 V battery, 2.5 mA current flows in the circuit. Calculate the resistance of unknown resistor.

(1) 1200 Ω (2) 2400 Ω (3) 3600 Ω (4) 4800 Ω

Ans. ***(4)***

Sol. $V = 12\ V$

$I = 2.5\ mA = 2.5 \times 10^{-3}\ A$

$R = 12 / 2.5 \times 10^{-3} = 4.8 \times 10^{3} = 4800\ \Omega$

61. Through which battle, British East India Company was established in India?

(1) Battle of Buxar (2) First Maratha revolt (3) Battle of Plassey (4) Second Mysore revolt

Ans. ***(3)***

Sol. Through Battle of Plassey, British East India Company was established in India

62. Who has given specific contribution in the formation of United Nations?

(1) American Chief Woodrow Wilson (2) British Prime Minister Lord George

(3) Head/President of France Fulmenso (4) OrLando from Italy

Ans. ***(1)***

Sol. American Chief Woodrow Wilson has given specific contribution in the formation of United Nations

63. How many maximum participants can be sent by every country to attend General Assembly of United Nations?

(1) Two (2) Five (3) Four (4) Three

Ans. ***(2)***

Sol. Maximum five participants can be sent by every country to attend General Assembly of United Nations

64. When did Indian National Congress demanded for complete independence (PoornaSwaraj)?

(1) Karachi Session (1930) (2) Kolkata Session (1933)

(3) Mumbai Session (1934) (4) Lahore Session (1929)

Ans. ***(4)***

Sol. Indian National Congress demanded for complete independence (PoornaSwaraj) in Lahore Session (1929)

65. Who was appointed as first Indian Governor General?

(1) Chakravarti C. Rajgopalachari (2) MotiLal Nehru

(3) JawaharLal Nehru (4) KanhaiyaLalMunshi

Ans. ***(1)***

Sol. Chakravarti C. Rajgopalachari was appointed as first Indian Governor General.

66. Who was the president of constitutional drafting committee?

(1) Dr. Rajendra Prasad (2) Motilal Nehru

(3) Dr. BhimraoAmbedkar (4) KanhaiyaLalMunshi

Ans. ***(3)***

Sol. Dr. Bhimrao Ambedkar was the President of constitutional drafting committee.

67. Which right is considered as "Soul of the constitution" by Dr. BhimraoAmbedkar?

(1) Right to Freedom (2) Right to follow any religion

(3) Educational and cultural right (4) Right to constitutional remedies

Ans. ***(4)***

Sol. Right to constitutional remedies is considered as "Soul of the constitution" by Dr. BhimraoAmbedkar

68. When did chairman of Loksabha can excise casting vote ?

(1) If Prime Minister is absent in House (Parliament).

(2) If equal votes are dropped in favour or against in the house.

(3) If bill is passed for the amendment in fundamental rights.

(4) If it is Money-bill.

Ans. ***(2)***

Sol. Chairman of Loksabha can excise casting vote if equal votes are dropped in favour or against in the house.

69. Who decides that the bill is a money bill?

(1) Finance minister

(2) Prime minister

(3) President

(4) Chairman of the Loksabha (Speaker) decides that the bill is a money bill

Ans. ***(4)***

Sol. Chairman of the Loksabha (Speaker)

70. Who is the chairman of RajyaSabha?

(1) The person nominated by the president. (2) Vice President

(3) The member of RajyaSabha selects any one of them (4) The person nominated by the Prime Minister

Ans. ***(2)***

Sol. Vice President is the chairman of RajyaSabha

71. Which meridian is followed as Indian Standard time?

(1) 81°.20' east meridian (2) 80°.00' east meridian

(3) 82°.30' east meridian (4) 81°.50' east meridian

Ans. ***(3)***

Sol. 82°.30' east meridian is followed as Indian Standard time.

72. Which of the following is a salt water lake?

(1) Sambhar lake (2) Nallake(Sarover) (3) Wularlake (4) Bhimtaal lake

Ans. ***(2)***

Sol. Nallake(Sarover) is a salt water lake

73. Which seasonal winds bring rain in Gujarat?

(1) South-west seasonal winds (2) Winds from Bay of Bengal

(3) Retreating monsoon winds (4) Winds from Arabian sea

Ans. ***(1, 4)***

Sol. South-west seasonal winds, Winds from Arabian sea seasonal winds bring rain in Gujarat

74. Which animal is extinct from Indian forest?

(1) Panther (2) Lion (3) Tiger (4) Rhinoceros

Ans. ***(1)***

Sol. Panther(Cheetah) is extinct from Indian forest

75. Which fair is not held in Gujarat?

(1) Taranetar Fair (2) Kumbh fair (3) Vautha fair (4) Bhavnath fair

Ans. ***(2)***

Sol. Kumbh fair is not held in Gujarat.

76. Where is Ashoka's pillar located in Gujarat?

(1) Patan (2) Vadnagar (3) Junagarh (4) Siddhpur

Ans. ***(3)***

Sol. Ashoka's pillar located Junagarh

77. Where in Gujarat Tana-Riri Mahotsav is celebrated?

(1) Vadnagar (2) Vijaynagar (3) Modhera (4) Taranetar

Ans. ***(1)***

Sol. In Gujarat Tana-Riri Mahotsav is celebrated Vadnagar

78. Which city of Gujarat is famous for its Women's Silk Garment?

(1) Surat (2) Ahmedabad (3) Patan (4) Jetpur

Ans. ***(3)***

Sol. Patan is famous for its Women's Silk Garment

79. Which is famous as center of Kasab (a gold or silver thread) for Jariwork (embroidery)?

(1) Varanasi (2) Lucknow (3) Jaipur (4) Surat

Ans. ***(4)***

Sol. Surat is famous as center of Kasab (a gold or silver thread) for Jariwork (embroidery)

80. Which is imitated Tribal Dance form "Chalo dance" in Gujarat?

(1) Violent animals (2) Birds (3) Domestic animals (4) Wild animals

Ans. ***(2)***

Sol. Birds is imitated Tribal Dance form "Chalo dance" in Gujarat.

81. Which information is given in couplet of Rigveda?

(1) To sing the different shloka of Veda in Lyrics (2) Different mantras and rituals to perform Yagya

(3) Information regarding "Description of Karamkand" (4) To praise god

Ans. ***(4)***

Sol. In Rig-Veda most of the verses are prayers of God.

82. Which was famous "Education Center in 7th Century A.D.?

(1) Nalanda (2) Vallabhi (3) Takshila (4) Lothal

Ans. ***(2)***

Sol. Vallabhi university of Gujarat was a very famous centre of education in 7th century.

83. What was described by Maharishi Charaka in "CharakSamhita"?

(1) Metallic ash (2) Chemical methods (3) Medicines (4) Surgery

Ans. ***(3)***

Sol. MaharshiCharak has written a book 'CharakSamhita' in which he has mentioned over 2000 medicinal herbs.

84. "Earth rotates on its own axis" who had proved this?

(1) Maharishi Charaka (2) AcharyaNagarjuna (3) Maharishi Sushruta (4) Aryabhatta

Ans. (4)

Sol. Aryabhatta, the great Gupta age astronomer declared that the earth rotates on its own axis and he proved that the basic reason for lunar eclipse is the shadow of the earth.

85. Which soil is best for cultivation of cotton?

(1) Red soil (2) Black soil (3) Sandy soil (4) Marshy soil

Ans. (2)

Sol. Black soil is more suitable for production and growth of cotton crop. That is why this soil is well known as black cotton soil.

86. Which is ubiquitious (convenient) resource?

(1) Water (2) Land (3) Petroleum (4) Oxygen

Ans. (4)

Sol. Oxygen is ubiquitious (convenient) resource.

87. Where in Gujarat, migratory birds come to spend winter?

(1) Gir (2) Kutch (3) Nal Lake (Sarovar) (4) Dang

Ans. (3)

Sol. During winter, migratory birds from distant places come to India like Keoladev National Park (Bharatpur), Nal Sarovar in Gujarat to spend winter.

88. Where is Gujarat's National Park located?

(1) Velavadar (2) Nilgiri (3) Sundarvan (4) Pachmarhi

Ans. (1)

Sol. Velavadar is a National park situated in Gujarat.

89. Which is Rabi Crop?

(1) Groundnut (2) Wheat (3) Paddy (4) Cotton

Ans. (2)

Sol. The rabi crops include wheat, barley, gram and oilseeds.

90. Gujarat ranks first in the world for production of which crop?

(1) Groundnut (2) Cotton (3) Cumin seed (4) Tobacco

Ans. (3)

Sol. Gujarat ranks first in the production of cumin seed, fennel seed and isabgul in the world.

91. Which is the chief resource of surface water on the earth?

(1) Rivers (2) Wells (3) Lakes (4) Pond

Ans. (1)

Sol. The water on the surface the earth is found in the form of river, lake, pond, sea streams etc. It is called surface water. Rivers are the main source of surface water

92. Where in India underground water is in abundance?

(1) Southern plateaus (2) Mountain ranges (3) Sandy plains (4) Northern plains

Ans. (4)

Sol. The volume of ground water is unlimited. In the Northern plains of India, there is about 42 % of ground water.

93. Which is not a characteristic of people living below the poverty line?

(1) Majority of them are literate

(2) Do not get sufficient meals twice in a day

(3) Average age of people is less than National average rate of people

(4) Suffering from acute and chronic diseases

Ans. ***(1)***

Sol. Poor people are generally illiterate.

94. What facilities are provided by the central government for people living below poverty line?

(1) Means of entertainment for recreation

(2) Books for reading

(3) Essential basic needs like cereals, sugar, oil, salt etc.

(4) Clothes for protection

Ans. ***(3)***

Sol. Essential basic needs like cereals, sugar, oil, salt etc., are provided by the central government for people living below poverty line.

95. Who is termed as "absolute poor"?

(1) Homeless poor

(2) Illiterate

(3) Do not get primary treatment

(4) Not able to fulfill their basic needs like (cereals, pulses, milk, vegetables) through local market.

Ans. ***(4)***

Sol. Those people of the society who are not able to purchase the basic necessities of life like food grains, pulses, milk, vegetables at lowest market rate are said to be absolute poor.

96. Which people are living below poverty line in rural area?

(1) Businessman

(2) Farm labourers without land

(3) Owners of cottage industries

(4) Have sources of income but poor lifestyle

Ans. ***(2)***

Sol. Generally Farm labourers without land were living below poverty line in rural area.

97. What is the cause of increasing unemployment?

(1) Increased demand of educational qualification.

(2) More numbers of labourers as compared to demand of labour.

(3) Increased health facilities.

(4) Increase in ability to purchase.

Ans. ***(2)***

Sol. More numbers of labourers as compared to demand of labour is the cause of increasing unemployment

98. Which programmes are executed by central government for eradication of poverty in urban areas?

(1) Development of agriculture

(2) Afforestation

(3) Animal husbandry support

(4) Development of large, small and cottage industries

Ans. ***(4)***

Sol. Development programmes for large, small and cottage industries are executed by central government for eradication of poverty in urban areas.

99. Which state has highest rate of unemployment?

(1) Himachal Pradesh (2) Haryana (3) Uttar Pradesh (4) Karnataka

Ans. (3)

Sol. In India more unemployment has been witnessed in states like Sikkim, Kerala, West Bengal, Uttar Pradesh, Chattisgarh, Jammu-Kashmir, Tripura.

100. Which scheme is implemented by the government of Gujarat for ensuring food security?

(1) Maa Annapoorna Scheme (2) Van bandhu Kalyan Scheme

(3) Mukhya Mantri Gram-Sadak Yojana (4) Manrega Scheme

Ans. (1)

Sol. Under this programme absolute poor families and people living below poverty line in cities and villages are given 35 Kg food grains per family every month by Gujarat Government which is provided free of cost and the poor people of middle class are given 5 Kg food grains at low rate.