NTSE PAPER 2012 (MIZORAM)
STAGE-1
(SAT)

Time allowed : One & half hours (90 Minutes)   **Maximum Marks : 90**

1.   The best expression of nationalism is :
          (a) French Revolution   (b) German Unification
          (c) Greek Revolution   (d) American War of Independence
Ans. **(a)**
Sol. The first clear expression of nationalism came with the French Revolution in 1789.

2.   He was a man of action and the knight-errand of Italian liberation. Name him.
          (a) Piedmont   (b) Garibaldi   (c) Mazzini   (d) Cavour
Ans. **(c)**
Sol. Giuseppe Mazzini was the Italian revolutionary. He was born in Genoa in 1807, he became a member of the secret society of the Carbonari.

3.   'Swaraj is our birth right' was the main slogan of :
          (a) Home Rule movement   (b) Khilafat Movement
          (c) Peasant Movement   (d) Tribal Movement
Ans. **(a)**
Sol. 'Swaraj (self rule) is my birthright' was the main slogan given by Bal Gangadhar Tilak. Tilak is considered as "Father of Indian National Movement".

4.   Give the correct chronological order of the following :
          I. Jallianwala Bagh Massacre
          II. Rowlatt Act
          III. Khilafat Movement
          (a) II, I, III   (b) I, II, III   (c) II, III, I   (d) I, III, II
Ans. **(a)**
Sol. Jallianwala Bagh Massacre - 13th April 1919.
          Rowlatt Act – 10th March 1919.
          Khilafat Movement - August 1920.

5.   Some inventors/writers and their works are stated below:
          A. Elly Whitely   I. David Copper field
          B. Charles Dickens   II. Vanity Fair
          C. James Hargreaves   III. Cotton gin
          D. W.M. Thackeray   IV. Spinning Jenny
          Which of the following indicates the correct matching of the above ?
          (a) A-III   B-II   C-I   D-IV
          (b) A-II   B-I   C-IV   D-III
          (c) A-III   B-I   C-IV   D-II
          (d) A-II   B-III   C-I   D-IV
Ans. **(c)**
Sol. The Cotton gin was invented by Elly Whitely on March 14, 1794. David Copper Field is the common name of eighth novel by Charles Dickens.
          James Hargreaves invented Spinning Jenny in 1764.
          W.M. Thackeray was famous for his satirical works, particularly Vanity Fair.

6.   The movement started by the Indian National Congress in 1905, which add the momentum of expansion of Indian industries was ?
          (a) Swadeshi movement   (b) Trade Union Movement
          (c) Left Movement   (d) Working Class Movement
Ans. **(a)**
Sol. Due to partition of Bengal in 1905 by Lord Curzon; Swadeshi movement was started by INC.

7. Which of the following countries is not associated with Indo-China ?
(a) Thailand   (b) Vietnam   (c) Laos   (d) Cambodia
Ans. **(a)**
Sol. Thailand is not associated with Indo-China.

8. Some persons and their works are stated below:
A. S.C. Bose   I. Gagging Act
B. Gandi   II. Nationalist Press of India
C. Raja Ram Mohan Roy III. Forward Bloc
D. Lord Canning   IV. Young India
Which of the following indicates the correct matching of the above ?
(a) A-I   B-II   C-III   D-IV
(b) A-III   B-IV   C-II   D-I
(c) A-III   B-I   C-IV   D-II
(d) A-IV   B-II   C-I   D-III
Ans. **(b)**
Sol. Forward Bloc emerged as a faction with in the INC in 1939.
Young India was a weekshed in English by Mahatma Gandhi from 1919 to 1932.
Raja Ram Mohan Roy was one of the pioneer's in freedom struggle of India working through press.
Lord Canning passed Gagging Act.

9. The one which is not the method adopted to fight depression of 1920's is ?
(a) Resort to inflation   (b) Reforms in banking system
(c) Control securities and commodities market   (d) Preferential tariffs
Ans. **(a)**
Sol. Inflation is not the method adopted to fight depression of 1920's

10. Matching the following :
A. Poland   I. Karolyi
B. Hungary   II. Land of the Vistula
C. Greece   III. Rhine Federation
D. Germany   IV. Prince Otto
(a) A-I   B-II   C-III   D-IV
(b) A-II   B-III   C-II   D-I
(c) A-II   B-I   C-IV   D-III
(d) A-IV   B-II   C-I   D-III
Ans. **(c)**
Sol. Land of the Vistula was the name applied to the lands of the Kingdom of Poland.
Bela Karolyi is a Romanian Gymnastic coach of Hungarian ethnicity.
Rhine Federation is a German based alliance which is based on a Constitutional Monarchy.

11. Which of the following options is incorrect ?
Resources can be classified
(a) on the basis of origin   (b) on the basis of shape
(c) on the basis of ownership   (d) on the basis of exhaustibility
Ans. **(b)**
Sol. Resources cannot be classified on the basic of shape.

12. Match the following :
A. Jute   I. Indian Wildlife Protection Act
B. 1972   II. Sorrow of Bengal
C. Damodar   III. Main Rabi crop
D. Wheat   IV. Golden Fibre
(a) A-III   B-IV   C-II   D-I
(b) A-IV   B-I   C-II   D-III
(c) A-III   B-I   C-IV   D-II
(d) A-IV   B-II   C-I   D-III
Ans. **(b)**
Sol. Jute is known as golden fibre. In 1972 – Indian Wild Life Protection Act was Passed.
Damodar river is called Sorrow of Bengal. Wheat is the main Rabi Crop.

13. Which one of the following describes a system of agriculture where a single crop is grown on a large area?
(a) Shifting agriculture   (b) Horticulture   (c) Plantation agriculture   (d) Intensive agriculture
Ans. **(c)**

Sol. Plantations are a type of commercial farming where single crop of tea, coffee, sugarcane, cashew; rubber, banana or cotton are grown.

14. Sources of energy that has been in use since a long period of time are called as :
(a) Renewable   (b) Non-renewable   (c) Non-conventional   (d) Conventional
Ans. **(d)**
Sol. Conventional sources of energy are those which have been in common use for a long time. e.g. Fire wood and fossil fuels.

15. Bauxite is an ore of :
(a) Aluminium   (b) Manganese   (c) Copper   (d) Iron
Ans. **(a)**
Sol. Bauxite ores contains aluminium.

16. Which one of the following does not contribute to conservation of energy resources ?
(a) Using public transport system   (b) Switching electricity when not required
(c) Using individual vehicles   (d) Using power saving devices
Ans. **(c)**
Sol. Using individual vehicles consumes more energy as to using public transport system.

17. On the basis of ownership, industries are categorised as :
(a) Large-scale and small-scale industries
(b) Public sector, private sector, joint sector and co-operative sector
(c) Basic industries and Consumer industries
(d) Agro-based and Mineral-based industries
Ans. **(b)**
Sol. On the basis of ownership, industries are categorised as Public sector, Private sector, Joint sector and Co-operative sector.

18. Which one of the following is the most important mode of transportation in India ?
(a) Pipeline   (b) Railways   (c) Roadways   (d) Airways
Ans. **(b)**
Sol. Railways is the most important mode of transportation in India.

19. Which one of the following is not a personal means of communication ?
(a) Letters   (b) Telephone   (c) e-mail   (d) Magazine
Ans. **(d)**
Sol. Magazine is not a personal means of communication.

20. The North-South Corridor links :
(a) Srinagar with Kanyakumari   (b) Srinagar with Tuticorin
(c) Porbandar and Silchar   (d) Delhi and Cochin
Ans. **(a)**
Sol. The North-South Corridor linking Srinagar (Jammu & Kashmir) and Kanyakumari (Tamil Nadu).

21. Which state in India has its own Constitution ?
(a) Meghalaya   (b) Sikkim   (c) Nagaland   (d) Jammu & Kashmir
Ans. **(d)**
Sol. Jammu and Kashmir state in India has its own Constitution.

22. What is the term used to describe the use of religion as a tool for dividing people ?
(a) Communalism   (b) Diversity   (c) Communism   (d)Regionalism
Ans. **(a)**
Sol. Communalism is the term in which a person shows allegiance to one's own ethnic group rather than to the wider society.

23. Which one of the following is not a national party ?
(a) BJP   (b) RJD   (c) NCP   (d) BSP
Ans. **(b)**
Sol. There were 6 national recognised parties in the India in 2006. They are : INC, BJP, BSP, CPI-M, CPI, NCP.

24. Who is empowered to make laws on Union List ?
(a) President   (b) Prime Minister   (c) Central Government   (d) Vice-President
Ans. **(c)**
Sol. Central government is empowered to make laws on Union list.

25. Which of the following is not an essential feature of Democracy ?
(a) Free and fair election (b) Centralization of power
(c) Universal Adult Franchise (d) Rule of law and respect for rights
Ans. **(b)**
Sol. Centralization of power is not an essential feature of Democracy.

26. The Constituent Assembly that wrote the India Constitution had :
(a) 299 members (b) 305 members (c) 388 members (d) 399 members
Ans. **(a)**
Sol. The total members of Constituent Assembly was 389 but because of partition the no. of numbers who drafted the Constitution of India was reduced to 299.

27. What is factionalism ?
(a) Raising voice against the government (b) Creating awareness among the masses
(c) Raiding people with immense wealth (d) Creating party within party
Ans. **(d)**
Sol. A group of persons forming a cohesive; usually contentious minority with a larger group.

28. Which of the following statements about Judiciary is false ?
(a) Every law passed by the Parliament needs judicial approval
(b) Judiciary can strike down a law if it goes against the spirit of Indian Constitution
(c) Judiciary is independent of the executive
(d) Any citizen can approach the court if his/her rights are violated
Ans. **(a)**
Sol. Law passed by Parliament does not need judicial approval.

29. The National Human Rights Commission is headed by the :
(a) President (b) Vice-President (c) Chief Justice (d) Prime Minister
Ans. **(c)**
Sol. The National Human Rights Commission is headed by the Chief Justice of the Supreme Court of India.

30. When any of our rights get violated, we can seek redressal under :
(a) Right to information (b) Right to freedom
(c) Right to constitutional remedies (d) None of the above
Ans. **(c)**
Sol. When any of our rights get violated, we can seek redressal under Right to Constitutional remedies.

31. Which of the following is not a right provided to the consumers ?
(a) Right to be heard (b) Right to be informed
(c) Right to consumers' education (d) Right to seek redressal
Ans. **(a, b, c, d)**
Sol. All options are correct. These all are the consumer rights.

32. What does ISO stand for ?
(a) International Organisation for Security (b) Indian Organisation for Standardisation
(c) Indian Organisation for Security (d) International Organisation for Standardisation
Ans. **(d)**
Sol. ISO means International Organisation for Standardisation**.**

33. Globalisation refers to ?
(a) different economic reforms
(b) the process of rapid integration of interconnection between countries
(c) the process of allowing private sectors to set up more industries
(d) the process of removing trade batteries by government.
Ans. **(b)**
Sol. Globalisation is the process of rapid integration or interconnection between countries.

34. GDP is the total value of _____ produced during a particular year.
(a) All final goods and services. (b) All goods and services.
(c) All intermediate goods and services (d) All intermediate and final goods and services.
Ans. **(a)**
Sol. Gross Domestic product is the total value of all final goods and services produced during a particular year.

35. What is the main criterion for comparing the development of different countries ?
(a) Population   (b) Education   (c) Family background   (d) Income

Ans. **(d)**

Sol. Per Capita Income is the main criterion for comparing the development of different countries.

36. The relation among u, v and f for a mirror is :
(a) f = uv(u + v)   (b) v = fu(u + f)   (c) u = fv(f + v)   (d) all of these

Ans. **(a)**

Sol. Mirror formula is
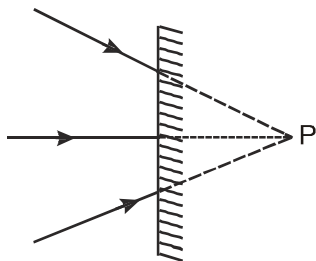
$$\frac{1}{f} = \frac{1}{v} + \frac{1}{u}$$

$$\frac{1}{f} = \frac{u+v}{uv}$$
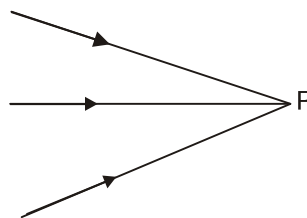
$$f = \frac{uv}{u+v}$$

37. If the rays constituting the beam actually meet at a point or appear to meet at a point, then the beam is :
(a) divergent   (b) convergent   (c) parallel   (d) equal

Ans. **(b)**

Sol.

rays appear to meet at P

rays actually meet at P

Only convergent rays can meet or appear to meet at a point

38. What is the power of a concave lens whose focal length is –75.0 cm ?
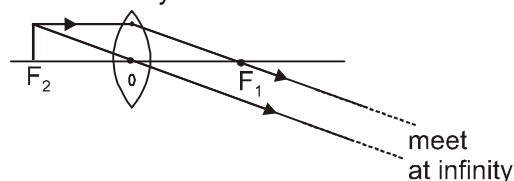(a) 1.33 D   (b) –13.3 D   (c) 13.3 D   (d) –1.33 D

Ans. **(d)**

Sol. $P = \dfrac{100}{-75} = -\dfrac{4}{3}D$

39. The image formed by a convex lens when the object lies at the focus is :
(a) virtual and erect   (b) real and erect   (c) real and inverted   (d) virtual and inverted

Ans. **(c)**

Sol. Real & inverted image is formed at infinity.

meet at infinity

40. In the human eye, the opaque diaphragm behind the cornea is called the :
(a) choroids   (b) iris   (c) retina   (d) lens

Ans. **(b)**

Sol. Opaque diaphragm behind the cornea is iris.

41. A _____ eye cannot distinctly see the objects that are too near.
(a) myopic   (b) presbyopic   (c) hypermetropic   (d) heterophoria

Ans. **(c)**

Sol. In hypermetropia eye can not see nearby objects.

42. An electric iron is connected to a 200 V mains supply and draws a current of 4.0 A. What is the power rating of the iron ?

(a) 800 W   (b) 50 W   (c) 106 W   (d) 112 W

Ans. **(a)**

Sol. $P = IV$

$= 200 \times 4 = 800$ watt.

43. A voltmeter is used for measuring :

(a) electric current   (b) resistance   (c) electric power   (d) magnetic field

Ans. **(c)**

Sol. If we know the voltage across a resistance then we can calculate power using

$P = \dfrac{V^2}{R}$

44. According to Fleming's Left Hand Rule, the _____ points in the direction of the magnetic field.

(a) thumb   (b) forefinger   (c) second finger   (d) middle finger

Ans. **(b)**

Sol. Forefinger tells direction of magnetic field.

45. A device which converts the electrical energy into the mechanical energy is called :

(a) dynamo   (b) electromagnet   (c) electric motor   (d) generator

Ans. **(c)**

Sol. An electric motor converts electrical energy to mechanical energy.

46. The percentage of methane in biogas is approximately :

(a) 30%   (b) 40%   (c) 35%   (d) 65%

Ans. **(d)**

Sol. The percentage of methane in biogas is approximately 65%.

47. The main constituent of LPG is :

(a) butane   (b) methane   (c) propane   (d) ethane

Ans. **(a)**

Sol. The main constituent of LPG is butane.

48. Sodium carbonate is also called :

(a) baking soda   (b) washing soda   (c) bleaching powder   (d) bread soda

Ans. **(b)**

Sol. Sodium carbonate (Na_2CO_3) is called washing soda.

49. What is the chemical formula of Plaster of Paris ?

(a) $(CaSO_4)_2 . H_2O$ (b) $(CaSO_4)_3 . H_2O$ (c) $(CaSO_4)_2 . 2H_2O$ (d) $(CaSO_4) . H_2O$

Ans. **(a)**

Sol. Chemical formula of plaster of Paris is $CaSO_4 . \frac{1}{2} H_2O$ or $(CaSO_4)_2 . H_2O$.

50. Of more than 114 elements known so far, ………….. are metals :

(a) 74   (b) 64   (c) 94   (d) 84

Ans. **(d)**

Sol. Of more than 114 elements known so far, 84 are metals.

51. About 88.6% of the universe is made up of :

(a) helium   (b) oxygen   (c) nitrogen   (d) hydrogen

Ans. **(d)**

Sol. About 88.6% of universe is made up of hydrogen.

52. Complete the chemical reaction $Mg(s) + H_2SO_4$ (aq) $\to$?:

(a) $MgSO_3 + H_2O$ (b) $MgSO + H_2O + O_2$ (c) $MgSO_4 + H_2$ (d) no reaction

Ans. **(c)**

Sol. $Mg(s) + H_2SO_4$ (aq) $\to MgSO_4 + H_2$.

53. …………….. is the process ion which there is loss of electrons :

(a) Oxidation   (b) Reduction   (c) Redox reaction   (d) both (a) and (b)

Ans. **(a)**

Sol. Oxidation is the process in which there is loss of electrons.

54. The reaction of an alcohol with carboxylic acid is called :
(a) combustion   (b) esterification   (c) saponification   (d) none of these
Ans. **(b)**
Sol. The reaction of an alcohol with carboxylic acid is called esterification.

55. An organic compound which contains a–OH functional group is called :
(a) aldehyde   (b) alcohol   (c) carboxyl   (d) ester
Ans. **(b)**
Sol. 'Alcohol' contains –OH (hydroxy) group.

56. Which one of these group of elements is also called the halogen family ?
(a) Group 16   (b) Group 18   (c) Group 10   (d) Group 17
Ans. **(d)**
Sol. 'Group 17' is also called halogen family.

57. There are ………. periods in the Modern Periodic Table.
(a) 7   (b) 18   (c) 9   (d) 2
Ans. **(a)**
Sol. There are 7 periods in the modern Periodic Table.

58. Organisms capable of synthesizing their own food are called :
(a) heterotrophs   (b) autotrophs   (c) decomposers   (d) parasites
Ans **(b)**
Sol. Organisms capable of synthesizing their own food are known as autotrophs.

59. The total volume of blood in an adult body is about :
(a) 6 to 7 litres   (b) 4 to 5 litres   (c) 5 to 6 litres   (d) 7 to 8 litres
Ans. **(c)**
Sol. The volume of blood in an adult person is about 5.5 litres.

60. Which of the following enzymes is present in saliva ?
(a) Pepsin   (b) Chymotrypsin   (c) Trypsin   (d) Ptyalin
Ans. **(d)**
Sol. Salivary amylase (Ptyalin) enzyme is present in saliva which starts digestion of carbohydrate.

61. The functional junction between two neurons is called :
(a) synapse   (b) axon   (c) dendrites   (d) none of these
Ans. **(a)**
Sol. The functional junction between two neurons is called synapse.

62. The anther contains :
(a) sepals   (b) ovules   (c) carpel   (d) pollen grains
Ans. **(d)**
Sol. The anther contains pollen grains which has male gamete.

63. Which one of the following is not a sexually transmitted disease ?
(a) Gonorhoea   (b) Syphilis   (c) AIDS   (d) Typhoid
Ans. **(d)**
Sol. Typhoid is not a STD. It is transmitted by contaminated water, milk, through flies.

64. The book 'Origin of Species' was written by :
(a) Darwin   (b) Lamarck   (c) Mendel   (d) de Vries
Ans. **(a)**
Sol. The book 'origin of species' was written by Darwin.

65. The transmission of traits from parents to offspring through gametes is called :
(a) variation   (b) heredity   (c) both (a) and (b)   (d) neither (a) nor (b)
Ans. **(b)**
Sol. The transmission of traits from parents to offspring through gametes is called heredity.

66. ………. are also called saprophytes .
(a) Producers   (b) Consumers   (c) Decomposers   (d) Parasites
Ans. **(c)**
Sol. Decomposess are also called saprophytes eg. Bacteria and Fungi.

67. Extensive planting of trees to increase forest cover is called :
(a) afforestation   (b) agroforestry   (c) deforestation   (d) plantation
Ans. **(a)**
Sol. Extensive planting of trees to increase forest cover is called afforestation.

68. A large ecosystem with its associated plants and animals is called :
(a) habitat   (b) biome   (c) biomass   (d) biota
Ans. **(b)**
Sol. A large ecosystem with its associated plants and animals is called biome

69. How many spinal nerves are there in human body ?
(a) 10 pairs   (b) 12 pairs   (c) 21 pairs   (d) 31 pairs
Ans. **(d)**
Sol. 31 pairs of spinal nerves are present in human body.

70. According to the Einstein's mass energy relation, E = ?
(a) mc (b) mc^2 (c) m^2c (d) mc^{-2}
Ans. **(b)**
Sol. $E = mc^2$ in known as Einstein's mass energy relation.

71. A polynomial of degree 3 is called :
(a) Linear polynomial   (b) Quadratic polynomial   (c) Cubic polynomial   (d) Biquadratic polynomial
Ans. **(c)**
Sol. Cubic polynomial

72. The decimal expansion of π is :
(a) a whole number   (b) terminating
(c) non-terminating but repeating   (d) non-terminating but-repeating
Ans. **(d)**
Sol. Non terminating but non repeating because π is an irrational number

73. The sum of rational and irrational number is :
(a) Rational   (b) Irrational   (c) Zero   (d) Integers
Ans. **(b)**
Sol. Irrational

74. A pair of equations x = a and y = b graphically represent lines which are :
(a) Intersecting at (a, b)   (b) intersecting at (b, a)
(c) parallel   (d) coincident
Ans. **(a)**
Sol.
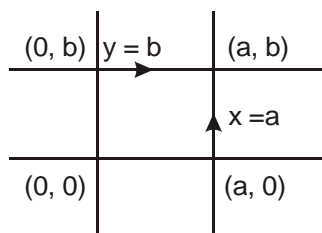
Intersecting at (a, b)

75. The quadratic equation $ax^2 + bx + c = 0$ will have real and distinct roots if :
(a) $b^2 - 4ac < 0$ (b) $b^2 - 4ac > 0$ (c) $b^2 - 4ac = 0$ (d) all the above
Ans. **(b)**
Sol. $b^2 - 4ac > 0$

76. Which of the following is not a quadratic equation ?
(a) $2(x-1)^2 = 4x^2 - 2x + 1$ (b) $(x^2 + 1)^2 = x^2 + 3x + 9$
(c) $(x^2 + 2x)^2 = x^4 + 3 + 4x^3$ (d) $x^2 + 9 = 3x^2 - 5x$
Ans. **(b)**
Sol. It is not a quadratic equation because, here maximum power of x is 4.

77. If the sum of the first n terms of an AP is given by $S_n = n^2 + 3n$, then the first term of the AP is :
(a) 1   (b) 2   (c) 3   (d) 4

Ans. **(d)**

Sol. Ist term $= s_1 = 1^2 + 3(1) = 4$

78. In $\triangle ABC$ and $\triangle DEF$, we have $\dfrac{AB}{DE} = \dfrac{BC}{FD}$. Triangles ABC and DEF will be similar if :
(a) $\angle A = \angle D$ (b) $\angle A = \angle F$ (c) $\angle B = \angle E$ (d) $\angle B = \angle D$

Sol. The language of the question is not proper.

79. The distance of origin from the point P(3, –2) is :
(a) $\sqrt{2}$ (b) $\sqrt{15}$ (c) $\sqrt{13}$ (d) $\sqrt{11}$
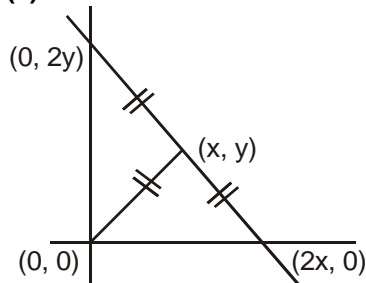
Ans. **(c)**

Sol. distance $= \sqrt{(0-3)^2 + (0+2)^2} = \sqrt{9+4} = \sqrt{13}$

80. The coordinates of a point which is equidistant from the three vertices A (0, 2y), O(0, 0) and B(2x, 0) of a triangle AOB are :

(a) (x, y)   (b) (y, x)   (c) $\left(\dfrac{x}{2}, \dfrac{y}{2}\right)$ (d) $\left(\dfrac{y}{2}, \dfrac{x}{2}\right)$

Ans. **(a)**

81. If $\sec^2 \theta (1 + \sin\theta)(1 - \sin\theta) = k$, then the value of k is :
(a) 0   (b) – 1   (c) 1   (d) 2

Ans. (c)

Sol. $\sec^2\theta (1 - \sin^2\theta) = k$
$\sec^2\theta \cos^2\theta = k = 1$

82. In a right angled triangle ABC, right angled at B, if tan A = 1, then the value of 2 sin A cos A :
(a) 2   (b) 1   (c) –1   (d) 0

Ans. **(b)**

Sol. tan A = 1
$\Rightarrow$ A = 45°
Then 2 sin A cos A = sin 2A = sin 90° = 1

83. Which of the following statements is not true ?
(a) There is only one tangent at a point of the circle
(b) The lengths of tangents drawn from the an external point to circle are equal
(c) There can be many tangents to a circle through a point lying outside the circle
(d) No tangent can be drawn to the circle from a point inside the circle

Ans. **(c)**

Sol. There can be only two tangents to a circle through a point lying outside the circle.

84. A solid sphere of radius x cm is melted and cast into the shape of a solid cone of height x cm, the radius of the base of the cone is :
(a) x cm   (b) 4x cm   (c) 3x cm   (d) 2x cm

Ans. **(d)**

Sol. volume of sphere $= \dfrac{4}{3}\pi x^3$, Volume of cone $= \dfrac{1}{3}\pi r^2 x$.

$\dfrac{4}{3}\pi x^3 = \dfrac{1}{3}\pi r^2 x$

$\Rightarrow$ r = 2x

85. A cone is divided into two parts by drawing a plane through the mid-point of its axis parallel to its base. Then the ratio of volumes of the two parts is :
(a) 1 : 7   (b) 2 : 7   (c) 7 : 2   (d) 3 : 2

Ans. **(a)**

Sol.

Volume of conical part = $\dfrac{1}{3}\pi y^2 x$

Volume of frustum = $\dfrac{1}{3}\pi (2y)^2 (2x) - \dfrac{1}{3}\pi y^2 x$

ratio = $\dfrac{\dfrac{1}{3}\pi y^2 x}{\dfrac{1}{3}\pi y^2 x (8-1)} = \dfrac{1}{7}$

86. If the mode of the data is 45 and mean is 27, then the median is :
(a) 36   (b) 33   (c) 30   (d) 28

Ans. **(b)**

Sol. mode = 3 (medium) – 2(mean)

45 = 3 (median) – 2 (27)

median = $\dfrac{99}{3} = 33$

87. Which of the following is true ?
(a) Probability of an event is always greater than 1.
(b) Probability of an event can be any positive number
(c) Probability of an event cannot be negative
(d) Probability of an event cannot be zero

Ans. **(c)**

Sol. probability of a event can not be negative

88. The King, Queen and Jack of clubs are removed from a deck of 52 cards and then well shuffled. One card is selected from the remaining cards. The probability of getting a club is :
(a) $\dfrac{13}{49}$ (b) $\dfrac{10}{49}$ (c) $\dfrac{3}{49}$ (d) $\dfrac{1}{49}$

Ans. **(b)**

Sol. probability = $\dfrac{13-3}{52-3} = \dfrac{10}{49}$

89. For the class-intervals 0-10, 10-20, 20-30, … which of the following statements is true ?
(a) 20 is included in the class 10-20   (b) 20 included in the class 20-30
(c) 10 is not included in any class   (d) 20 is included in both 10-20 and 20-30

Ans. **(b)**

Sol. 20 included in the classes 20 – 30

90. The angled of a triangle are in the ratio 1 : 5 : 3, the smallest angle of the triangle is :
(a) 20°   (b) 60°   (c) 90°   (d) 100°

Ans. **(a)**

Sol. smallest angle = $\dfrac{1}{9} \times 180° = 20°$

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