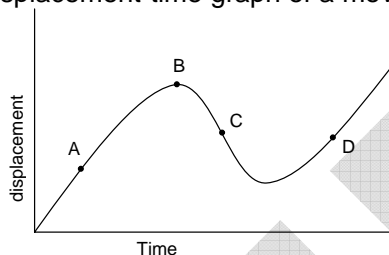


OPEN MERIT (JSTS) SCHOLARSHIP EXAM, 2012 - 2013 (GENERAL SCIENCE AND MATHEMATICS)

1. What is the correct ascending order for frequencies of the following radiations?
- | | |
|------------------|-----------------|
| (1) Visible | (2) X-rays |
| (3) Ultra-violet | (4) Radio waves |
| (1) 1, 3, 2, 4 | (2) 3, 2, 4, 1 |
| (3) 4, 1, 3, 2 | (4) 4, 3, 1, 2 |

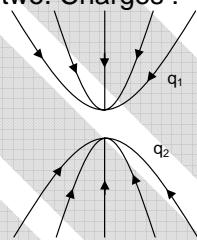
2. In an atomic explosion, enormous energy is released which is due to the :
- (1) Conversion of neutrons into protons
 - (2) Conversion of chemical energy into heat energy
 - (3) Conversion of mechanical energy into Nuclear energy
 - (4) Conversion of mass into energy

3. The displacement-time graph of a moving particle is show below :



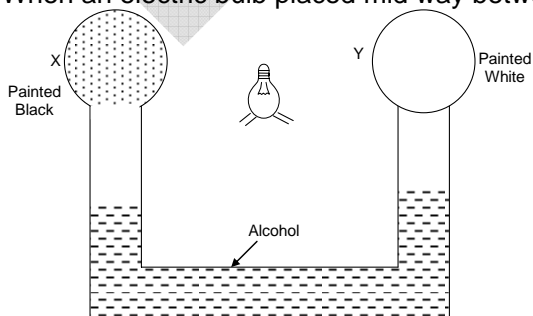
The instantaneous velocity of the particle is negative at the point?

- | | |
|-------|-------|
| (1) A | (2) B |
| (3) C | (4) D |
4. The figure given below is a plot of lines of force due to Charges q_1 and q_2 . Figure out the Sign of the two. Charges :



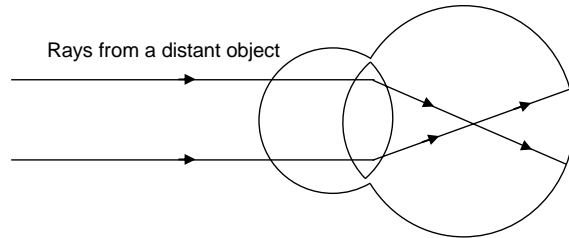
- | | |
|---------------------------------------|---------------------------------------|
| (1) both positive | (2) both negative |
| (3) q_1 positive and q_2 negative | (4) q_2 negative and q_1 positive |

5. Two bulbs X and Y painted black and white respectively are filled with air and connected by a U tube partly filled with alcohol. What happens to levels of alcohol in the limbs X and Y. When an electric bulb placed mid way between the bulbs is lighted :



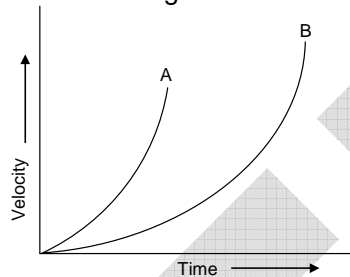
- (1) The level of alcohol falls in both the limbs
- (2) The level of alcohol in limb X rises while that in limb Y falls
- (3) The level of alcohol in limb X falls while that in Y rises
- (4) There is no change in the levels of alcohol in the two limbs

6. A person is suffering from some sight problem. From the given diagram say which defect he suffers from?



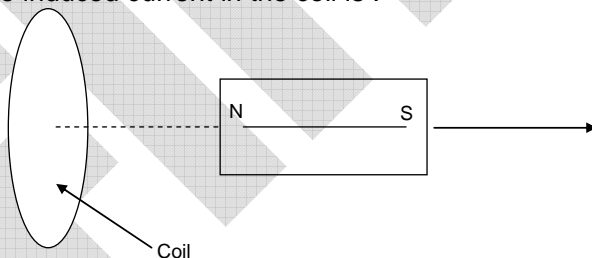
- (1) Myopia
- (2) Hyper metropia
- (3) Cataract
- (4) Astig matism

7. V-F graph of two vehicles A and B starting at the same time from rest is given as under. Which of the following statements can be deduced from the graph as correct?



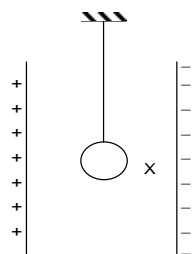
- (A) Velocity of B is higher than that of A
- (B) Acceleration of A is higher than that of B
- (C) Acceleration of B is higher than that of A
- (D) Acceleration of A is increasing at a slower rate than that of B

8. A magnet NS is placed along the axis of a circular coil. The magnet is moved away from the coil. The induced current in the coil is :



- (1) Zero
- (2) Clockwise
- (3) Anti-clockwise
- (4) None of these

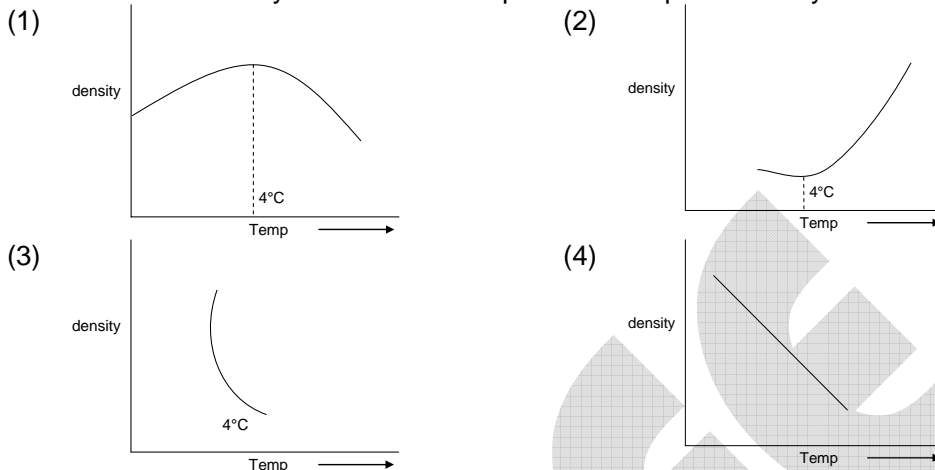
9. The uncharged Metallic Sphere X suspended as shown in figure. The Metallic sphere is given a push so that it moves towards the +ve plate. Which of the following statement is correct?



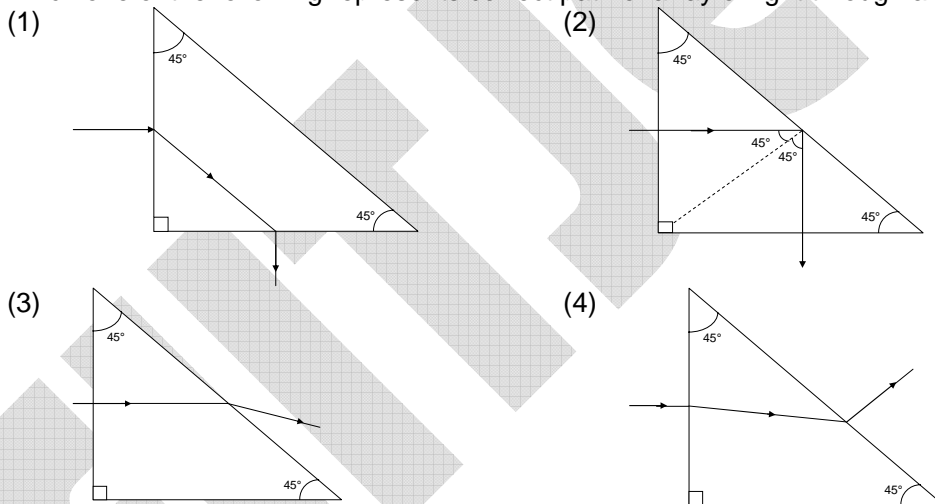
- (1) X touches the +ve plate and remains in contact with it.

- (2) X touches +ve plate and then moves towards negative plate and remains in contact with it.
- (3) X moves to and fro between the two plates with a constant time period.
- (4) X moves to and fro between the two plates with an increasing time period.

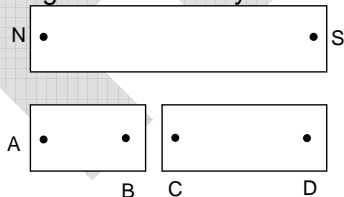
10. The variation of density of water with temperature is represented by the curve :



11. Which one of the following represents correct path of a ray of light through a glass prism:



12. If a bar magnet accidentally breaks up into two parts. The polarity of ends A, B, C & D will be



- (1) A, B North poles, C, D South poles
- (2) A, C North poles, B, D South poles
- (3) A, B, C North poles, D South poles
- (4) A North pole, D South pole. Polarity of B and C cannot be determined

13. The device used to convert A.C. into D.C. is :

- (1) ammeter
- (2) galvanometer
- (3) rectifier
- (4) transformer

14. In the visible spectrum, the colour having shortest wavelength is :

- (1) Red
- (2) Yellow

- (3) Blue (4) Violet
15. The most intense man-made light source is :
 (1) Laser (2) LED
 (3) Maser (4) Mercury Vapour Lamp
16. The bill of electric consumption is based on the measurement of
 (1) current (2) voltage
 (3) wattage (4) none of these
17. When a bucket full of water is drawn in water, its weight becomes less than before due to :
 (1) Density of water (2) Buoyancy force
 (3) Pressure of water (4) Surface tension of water
18. Which of the following cannot be accelerated in a cyclotron :
 (1) Proton (2) α -particle
 (3) Electron (4) Neutron
19. A material that allows partial transmission of incident light is called :
 (1) Semi-permeable (2) Transducer
 (3) Transparent (4) Translucent
20. Due to which of the following a shaving blade when placed gently on water floats?
 (1) Surface Tension (2) Viscosity
 (3) Law of floatation (4) Archimedes' Principle
21. The stars twinkle in the night, because :
 (1) Their emit light intermittently
 (2) The star's atmosphere absorbs light intermittently
 (3) The earth's atmosphere absorbs light intermittently
 (4) The refractive index of air in atmosphere fluctuates
22. The velocity of particle moving with a uniform speed changes with time according to the relation $V = 2 - 3t + 4t^2$, then v-t graph of the particle is a :
 (1) straight line parallel to X-axis (2) a straight line parallel to Y-axis
 (3) a parabola (4) a circle
23. Small liquid drops are spherical in shape because
 (1) of adhesion
 (2) of gravitational force
 (3) of the atmospheric pressure from all sides of the drop
 (4) the liquid drops tend to have minimum surface area due to surface tension
24. When the same note is played on a sitar and a flute. The sound produced can be distinguished from each other because of the difference in
 (1) Pitch, Loudness and quality (2) Pitch and Loudness
 (3) Quality only (4) Loudness only
25. Distribution of electric power from one place to another is done of high A.C. (Alternating Current) Voltage, because
 (1) Wastage of electricity is minimised (2) The distribution of power is economical
 (3) Stealing of electric wires is prevented (4) It is safe to handle
26. When an object is placed between two mirrors placed inclined to each other at an angle of 45° . Number of images formed are :
 (1) 3 (2) 5
 (3) 7 (4) None of these


27. Speed of sound is greater in solids than in liquids, because :
- (1) The atoms in solids are regularly arranged
 - (2) The atoms in liquids are loosely packed
 - (3) The solids have high elasticity
 - (4) None of these
28. A piece of paper and a cricket ball are dropped simultaneously from the same height. They will strike the ground simultaneously, if they:
- (1) have the same volume
 - (2) have the same mass
 - (3) have the same density
 - (4) are in vacuum
29. The speed of light will be minimum while passing through :
- (1) Glass
 - (2) Air
 - (3) Water
 - (4) Vacuum
30. A Red object when seen through a thick blue glass appears :
- (1) Green
 - (2) Violet
 - (3) Black
 - (4) Red
31. Electromagnetic Induction is used in :
- (1) Galvanometer
 - (2) Thermo couple
 - (3) Generators
 - (4) Voltmeter
32. The law of conservation of Energy states that :
- (1) Energy can be created as well as destroyed
 - (2) Energy can be created but not destroyed
 - (3) Energy cannot be created but can be destroyed
 - (4) Energy can neither be created nor destroyed
33. The bats are able to fly in dark since their wings produce :
- (1) Sound waves
 - (2) Ultrasonic waves
 - (3) Infra-red waves
 - (4) Ultra violet rays
34. If a person can see an object clearly when it is placed at 25 cm away from him, he is suffering from :
- (1) myopia
 - (2) hyper metropia
 - (3) astigmatism
 - (4) none of these
35. Choose the correct sequence :
- | | |
|--------------------------|--------------------------------|
| (A) Intensity of light | (1) Properties of the mediums |
| (B) Colour of light | (2) Refractive Index of medium |
| (C) Velocity of light | (3) Amplitude of light |
| (D) Propagation of light | (4) Frequency of light |
| (1) 2, 4, 1, 3 | (2) 3, 4, 2, 1 |
| (3) 3, 1, 2, 4 | (4) 4, 2, 3, 1 |
36. A Pond is covered with a layer of ice and the external temperature is -30°C . The temperature of water in contact with lower surface of ice is :
- (1) 4°C
 - (2) 0°C
 - (3) -15°C
 - (4) -30°C
37. An air bubble in water will act like a :
- (1) Convex Mirror
 - (2) Concave Mirror
 - (3) Convex lens
 - (4) Concave lens

38. A vehicle moving on a circular path experiences :
- (1) Inertia (2) Centripetal force
(3) Gravitational pull of Earth (4) Centrifugal force
39. The colour of the sky looks blue because:
- (1) Sky is made up of blue colour particles
(2) Blue colour is of longer wave length
(3) Blue colour is more prominent in Sunlight
(4) Blue colour of light is of shorter wave length so easily scattered by dust articles and water vapour.
40. An ice cube is floating in a glass of water. How will the water level in the glass be affected when the ice cube melts?
- (1) It will rise (2) It will go down
(3) It will remain unchanged (4) It would first go up later on it will go down
41. KE (Kinetic Energy) of molecules in gases is directly proportional to
- (1) Temperature (2) Pressure
(3) Temperature and Pressure (4) Atmospheric Pressure
42. Which of the following is not an endothermic process?
- (1) Fusion (2) Transpiration
(3) Respiration (4) Sublimation
43. Bose-Einstein Condensate have
- (1) Ability to be used as model black-hole
(2) Existence at very high temperature
(3) Isolated gaseous atoms
(4) High Kinetic Energy
44. When 500 ML ethylalcohol (pure) is mixed in 500 ML. Water (pure), the volume of the mixture will be
- (1) 1.0 L (2) Less than 1.0 L
(3) Immiscible (4) More than 1.0 L
45. Which of the following cannot be separated by sublimation?
- (1) Iodine and common salt (2) Iodine and Ammonium chloride
(3) Camphor and common salt (4) Naphthalene and sand
46. Which of the following statement is not correct?
- (1) Milk is an example of colloidal solution
(2) Coloidal solution shows electrophoresis
(3) Colloidal solution is homogeneous mixture
(4) Sky is blue due to Tyndall effect
47. A mixture of blue ink and red ink can be separated by
- (1) evaporation (2) distillation
(3) Chromatography (4) Steam distillation
48. Which of them is solid at room temperature but becomes liquid in the palm?
- (1) Hg (2) Na
(3) Mg (4) Ga
49. Which metal is present in Vit-B12?
- (1) Fe (2) Mg
(3) Co (4) Mn

50. Chemical symbol of metal tungsten is
(1) W (2) Xe
(3) Y (4) Zr
51. Which polymer is biodegradable?
(1) H D P (2) L D P
(3) P V C (4) P L A
52. Percentage of nitrogen in urea (NH_2CONH_2) is
(1) 23.3% (2) 46.7%
(3) 69.9% (4) 11.66%
53. Which does not equal to 1 mole of nitrogen gas?
(1) 22.4 L of N_2 at STP (2) 28 g of nitrogen
(3) 6.022×10^{23} nitrogen atoms (4) 22400 cc. of N_2 at STP
54. Which one has highest calorific value?
(1) CNG (2) LPG
(3) H_2 -gas (4) PNG
55. Which one of the following is used for artificial rains?
(1) AgI (2) NaCl
(3) CaCO_3 (4) CaCl_2
56. Choose the incorrect pair
(1) NO – Neutral oxide (2) Cl_2O_7 – Acidic oxide
(3) MgO – Basic Oxide (4) P_4O_{10} – Basic oxide
57. What is cetane number?
(1) Parameter to measure water pollution
(2) Parameter to measure air pollution
(3) Parameter to measure quality of diesel
(4) Parameter to measure quality of CNG
58. 32 amu of He contains
(1) 8 moles of He-atoms (2) 8 atoms of He
(3) $8 \times 6.022 \times 10^{23}$ atoms of He (4) 16 molecules
59. The mass of single atom of an element 'X' is 2.65×10^{-23} g. The atomic mass and name of the element 'X' is
(1) 16 u, Oxygen (2) 32 u, Sulphur
(3) 14 u, Nitrogen (4) 18 u., Fluorine
60. TEL is used as
(1) Telephonic device (2) Antiknock agent
(3) Medicine (4) Food preservative
61. Which is acidic in nature?
(1) NaOH (2) $\text{Mg}(\text{OH})_2$
(3) $\text{B}(\text{OH})_3$ (4) $\text{Al}(\text{OH})_3$
62. Which of the following contains maximum number of atoms?
(1) 1 g CO_2 (2) 1 g N_2
(3) 1 g O_2 (4) 1 g CH_4

63. Galena is an ore of
 (1) Copper (2) Zinc
 (3) Lead (4) Gallium
64. Who discovered the nucleus found in atom?
 (1) J.J. Thomson (2) Goldstein
 (3) Chadwick (4) Rutherford
65. Number of neutrons in 23 g sodium metal is
 (1) 72.264×10^{23} (2) 6.022×10^{23}
 (3) 12 (4) 11
66. Which cell is used in wrist watches
 (1) Leclanche cell (2) Mercury cell
 (3) Daniel cell (4) Lead storage battery
67. Metal present in chloroplast is
 (1) Iron (2) Copper
 (3) Magnesium (4) Cobalt
68. Which pair is isotones
 (1) ${}^1_1\text{H}$ and ${}^2_1\text{H}$ (2) ${}^3_1\text{H}$ and ${}^3_2\text{He}$
 (3) ${}^3_2\text{He}$ and ${}^4_2\text{He}$ (4) ${}^3_1\text{H}$ and ${}^4_2\text{He}$
69. Which is incorrect order of size?
 (1) $\text{Na} > \text{Na}^+$ (2) $\text{Na}^+ > \text{Mg}^{2+}$
 (3) $\text{Cl}^- > \text{Cl}$ (4) $\text{F}^- > \text{O}^{2-}$
70. An element has 9 protons, 9 electrons and 10 neutrons, per atom 'B' element has 12 protons, 12 electrons and 12 neutrons per atom. Formula of compound between 'A' and 'B' will be
 (1) BA_2 (2) AB_2
 (3) B_2A_3 (4) A_2B_3
71. Chemically the "water gas" is
 (1) H_2O (gaseous) (2) $\text{CO}_2 + \text{H}_2$
 (3) $\text{CH}_4 + \text{H}_2\text{O}$ (4) $\text{CO} + \text{H}_2$
72. Which chemical is mixed in LPG to detect its leakage?
 (1) H_2S (Hydrogen sulphide) (2) Ethylmercaptan
 (3) Sulphur dioxide (4) Biogas
73. Which chemical is blended in butter for preservation?
 (1) Sodium benzoate (2) B H A
 (3) Vitamin-C (4) Sodium stearate
74. The energy of an electron in an atom is
 (1) Always negative (2) Always positive
 (3) Always zero (4) All of the above
75. Given below are two statements :
 (a) Reactive metals react with oxygen forming metallic oxide
 (b) Metallic oxides are basic in nature
 Choose correct option
 (1) Statements (a) and (b) are correct
 (2) Statements (a) and (b) are incorrect

- (3) Statements (a) is correct and (b) is incorrect
 (4) Statement (a) is incorrect and (b) is correct
76. In non-sticky cookware's, which polymer is coated?
 (1) Teflon (2) CFC
 (3) PVC (4) LDP
77. Which polymer is used as synthetic wool?
 (1) Rayon (2) Nylon-66
 (3) Acrylic polymer (4) Melamine
78. Which is not a biodegradable polymer?
 (1) PH BV (2) HDP
 (3) PLA (4) PGA
79. The chemical formula of blue vitriol is
 (1) $\text{Na}_2\text{SO}_4 \cdot 10\text{H}_2\text{O}$ (2) $\text{ZnSO}_4 \cdot 7\text{H}_2\text{O}$
 (3) $\text{FeSO}_4 \cdot 7\text{H}_2\text{O}$ (4) $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$
80. Which of the following is not a fossil fuel?
 (1) LPG (2) PNG
 (3) TNG (4) CNG
81. In composite Fish Culture
 (1) Fish culture is done with a rice crop
 (2) Two species of fish are selected
 (3) 5 – 6 Fish species are selected which do not compete for food
 (4) None of the above
82. Increase in oil production is called:
 (1) Golden revolution (2) Yellow revolution
 (3) White revolution (4) Blue revolution
83. A cell placed in a solution swells up. The solution is:
 (1) Hypotonic (2) Hypertonic
 (3) Isotonic (4) Both 1 and 2
84. Which is the following is a mismatch:
 (1) Leprosy – Bacteria (2) AIDS – Bacteria
 (3) Malaria – Protozoa (4) Elephantiasis – Namatode
85. Health is a state of
 (1) Physically well (2) Mentally well
 (3) Socially well (4) All the above
86. Which one is not a infectious disease:
 (1) Common cold (2) Tuberculosis
 (3) Cancer (4) Cholera
87. The process in which water molecules moves from a high concentration to a region of low water concentration through a semi – permeable membrane is known as:
 (1) Osmosis (2) Transpiration
 (3) Diffusion (4) None of the above
88. Cell organell known as suicide bags:
 (1) Golgi apparatus (2) Plastid
 (3) Endoplasmic reticulum (4) Lysosome

89. Mitochondria are strange organelles as they have their own:
 (1) Nucleus (2) DNA
 (3) Ribosome (4) 2 and 3 both
90. Which one is not a meristemataic tissue:
 (1) Apical meristem (2) Phloem
 (3) Cambium (4) Intercalary meristem
91. Which one is not a tissue:
 (1) Blood (2) Muscle
 (3) Nucleus (4) Xylem
92. Label the part:

- (1) Dendrite (2) Nerve ending
 (3) Cell body (4) Axon
93. Starfish belongs to phylum:
 (1) Mollusca (2) Coelenterate
 (3) Arthropoda (4) Echinodermata
94. Ulothrix belongs to
 (1) Thallophyta (2) Amoeba
 (3) Bryophyta (4) None of the above
95. Plants with naked seeds are found in:
 (1) Bryophyta (2) Gymnosperm
 (3) Angiosperm (4) Pteridophyta
96. Chromosomes are made up of:
 (1) DNA (2) Protein
 (3) DNA and Protein (4) RNA
97. Tendon is a structure which connects:
 (1) Bone with bone (2) Muscle with bone
 (3) Nerve with muscle (4) Muscle with muscle
98. Who is not a cold blooded animal?
 (1) Turtle (2) Bat
 (3) Snake (4) Lizard
99. Neem tree is
 (1) Annual (2) Binneal
 (3) Shrub (4) Perrineal
100. Mammals who do not give birth to young ones
 (1) Echidna (2) Bat
 (3) Rat (4) Cat
101. System of Scientific naming included
 (1) Phylum and genus (2) Class and species
 (3) Genus and species (4) Genus and class

102. The process of carrying food from leaves to other parts of a plant is called
(1) Transpiration (2) Translocation
(3) Transportation (4) Transformation
103. In anaerobic respiration pyruvate is converted into
(1) ethanol (2) CO₂
(3) acetic acid (4) lactic acid
104. Filtration unit of kidney is
(1) ureter (2) urethra
(3) neuron (4) nephron
105. Cochlea is related to
(1) ear (2) nose
(3) tongue (4) eye
106. Peptic ulcer is caused by
(1) Helicobacter pylori (2) Trypanosoma
(3) Staphylococci (4) None of the above
107. Which of the following is gaseous fumigant?
(1) DDT (2) Methyl bromide
(3) Aluminium phosphide (4) Ethylene dichloride
108. The part of seed which grows into root on germination
(1) cotyledon (2) plumule
(3) radicle (4) none of the above
109. Theory of Natural Selection is given by
(1) Mendel (2) Lamark
(3) Newton (4) Darwin
110. The Three R's which can help to conserve natural resources:
(1) recycle, regenerate, reuse (2) reduce, recycle, reuse
(3) reduce, reuse, redistribute (4) both 1 and 2
111. The diseases last for only very short period of time is known as
(1) Chronic disease (2) Acute disease
(3) infectious disease (4) None of the above
112. The animals carrying the infecting agents from a sick person to other are called
(1) Vector (2) Parasite
(3) Host (4) Infection
113. Causing storage losses to agricultural produce
(1) Insects (2) Rodents
(3) Mites (4) All the above
114. In Plant Hybridisation crossing is done between
(1) Intervarietal (2) Interspecific
(3) Intergeneric (4) All the above
115. Which of the following is a micronutrient?
(1) Nitrogen (2) Phosphorus
(3) Copper (4) Sulphur

116. Growing of different crops on a piece of land in a pre – planned succession is known as:
 (1) Inter cropping (2) Crop rotation
 (3) Hybridisation (4) None of the above

117. One of the following is a green House gas
 (1) CO₂ (2) N₂
 (3) O₂ (4) H₂

118. In Nitrogen cycle which bacteria is responsible for nitrification?
 (1) Rhizobium (2) Clostridium
 (3) Nitrosomonas (4) None of the above

119. Leghorn is a improved variety of
 (1) Fish (2) Cow
 (3) Sheep (4) Fowl

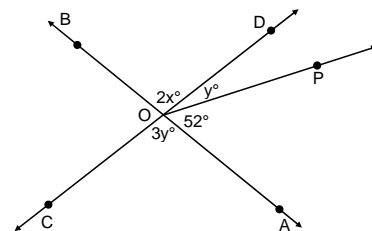
120. Which of the following is a rock bee?
 (1) Apis dorsata (2) Apis cerana
 (3) Apis floriae (4) Apis mellifera

121. If $\frac{6}{3\sqrt{2}-2\sqrt{3}} = 3\sqrt{2} - a\sqrt{6}$, then the value of a is
 (1) $\sqrt{2}$ (2) $-\sqrt{2}$
 (3) $2\sqrt{3}$ (4) $-2\sqrt{3}$

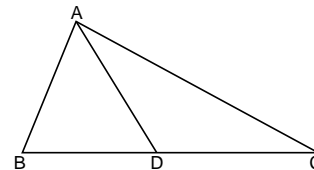
122. Value of $(x+y)^{-1}(x^{-1}+y^1)$ is
 (1) 1 (2) $(x+y)^2$
 (3) $x^{-1}y^{-1}$ (4) $(xy)^{-1}(x+y)^{-1}$

123. Which of the following is equal to x?
 (1) $x^{\frac{11}{7}} - x^{\frac{4}{7}}$ (2) $x^{\frac{11}{7}} \times x^{\frac{7}{11}}$
 (3) $\sqrt[12]{(x^4)^{1/3}}$ (4) $(\sqrt{x^4})^{\frac{1}{2}}$

124. In the figure, AB and CD intersect at O. The value of x is
 (1) 32 (2) 42
 (3) 48 (4) 96



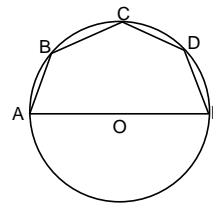
125. In the figure, AB = BD and AD = DC, then $\angle BAC : \angle ACB$ is
 (1) 1 : 2 (2) 2 : 1
 (3) 1 : 3 (4) 3 : 1



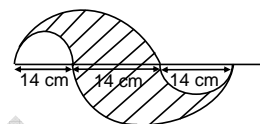
126. The perimeter of an equilateral triangle is 60 m. Its area will be
 (1) $5\sqrt{3}m^2$ (2) $25\sqrt{3}m^2$
 (3) $100\sqrt{3}m^2$ (4) $200\sqrt{3}m^2$

127. Area of a rhombus whose one side is 13 cm and one of the diagonals is 10 cm is
 (1) 36 cm^2 (2) 52 cm^2
 (3) 60 cm^2 (4) 120 cm^2

128. ABCDE is a pentagon inscribed in a circle with centre O. $\angle ABC + \angle CDE$ will be
 (1) 108° (2) 180°
 (3) 270° (4) 360°



129. Area of the shaded region is
 (1) 154 cm^2 (2) 231 cm^2
 (3) 462 cm^2 (4) 616 cm^2



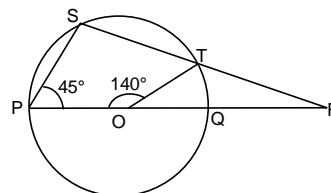
130. Square pieces of side 2 cm are cut off from each corner of a square sheet of side 9 cm. The flaps of the sheet so formed are folded to form an open box. The volume of the box is
 (1) 20 cm^3 (2) 28 cm^3
 (3) 50 cm^3 (4) 98 cm^3

131. If $\left(a + \frac{1}{a}\right)^2 = 3$, the value of $a^3 + \frac{1}{a^3}$ will be
 (1) 0 (2) $-2\sqrt{3}$
 (3) $3\sqrt{3}$ (4) $6\sqrt{3}$

132. If the polynomials $ax^3 + 4x^2 + 3x - 4$ and $x^3 - 4x + a$ leave the same remainder when divided by $x - 3$, then the value of a is
 (1) 1 (2) -1
 (3) $\frac{19}{14}$ (4) $-\frac{5}{14}$

133. In a square PQRS, if P(1, 0), Q(4, 0) and S(1, 3), then the coordinates of point R will be
 (1) (4, 1) (2) (4, 4)
 (3) (3, 4) (4) (4, 3)

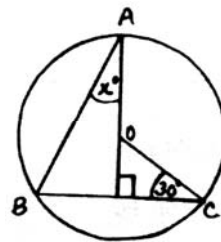
134. In the figure, if O is the centre of the circle, then $\angle TRQ$ is
 (1) 25° (2) 35°
 (3) 45° (4) 70°



135. The edges of a triangular board are 50 cm, 120 cm and 130 cm. The cost of painting it at the rate of Rs. 900 per m^2 is
 (1) Rs. 27 (2) Rs. 270
 (3) Rs. 540 (4) Rs. 27000

136. Mean of all the factors of 18 is
 (1) 4.25 (2) 5.0
 (3) 6.5 (4) 7.6

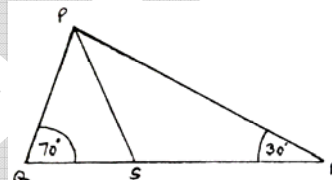
137. In the figure, if O is the centre of the circle, then value of x is
- (1) 15 (2) 30
(3) 45 (4) 60



138. The distances of a point from the x-axis and the y-axis are 5 and 4 respectively. The coordinates of the point can be
- (1) (5, 4) (2) (5, 0)
(3) (0, 4) (4) (4, 5)

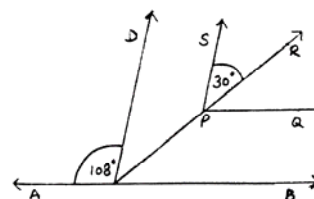
139. Volumes of two spheres are in the ratio 125 : 64. The ratio of their surface areas will be
- (1) 5 : 4 (2) 25 : 16
(3) 16 : 25 (4) 125 : 64

140. In the figure, PS bisects $\angle P$, PQ, QS and SR in ascending order are
- (1) QS, PQ, SR (2) QS, SR, PQ
(3) PQ, QS, SR (4) SR, PQ, QS



141. The mean marks of boys and girls in an examination are 60 and 65 respectively. If the mean marks of all the students in that examination is 62, then the ratio of the number of boys to the number of girls is
- (1) 2 : 3 (2) 3 : 2
(3) 122 : 127 (4) 5 : 62

142. In the figure, $AB \parallel PQ$ and $CD \parallel PS$, then $\angle QPR$ is
- (1) 30° (2) 42°
(3) 52° (4) 108°



143. Autorikshaw fare in a city is Rs. 20 for first two kilometers and Rs. 6/km for subsequent distances covered. Taking the distance covered as x km and total fare as Rs. y, the linear equation which expresses the above statement is
- (1) $y = 6x + 8$ (2) $y = 6x - 8$
(3) $y = 20 + 6x$ (4) $y = 6x + 28$

144. If an angle is 24° more than half of its complement then the angle is
- (1) 14° (2) 38°
(3) 46° (4) 76°

145. 20 circular plates each of radius 14 cm and thickness 2 cm are placed one above the other to form a cylindrical solid. The total surface area will be
- (1) 2992 cm^2 (2) 3520 cm^2
(3) 4752 cm^2 (4) 24640 cm^2

146. ABCD is a parallelogram with $AB = (2x + 6)$ cm, $BC = 8$ cm and $CD = (x + 8)$ cm. The perimeter of || gm ABCD is
(1) 12 cm (2) 20 cm
(3) 28 cm (4) 36 cm
147. For the data (2, 9, $x + 6$, $2x + 3$, 5, 10, 5) if mean is 7, then mode is
(1) 3 (2) 5
(3) 9 (4) 10
148. ABCD is a rhombus in which altitude from D to side AB bisects AB. Then $\angle D$ of the rhombus is
(1) 60° (2) 90°
(3) 120° (4) 135°
149. From the data (1, 4, 7, 16, 27, 29) if 29 is removed, the probability of getting a prime number is
(1) $\frac{1}{2}$ (2) $\frac{1}{5}$
(3) $\frac{2}{5}$ (4) $\frac{1}{3}$
150. PQRS is a square T and U are respectively the mid points of PS and QR. If Q is the point of intersection of TU and QS and $PQ = 8$ cm, then area of ΔOTS is
(1) 4 cm^2 (2) 8 cm^2
(3) 12 cm^2 (4) 18 cm^2