1. Conidia are

A. Sexual stage

B. Spores

C. Protisa

D. Prokaryotes

2. Green coloured roots are seen

A. Taeniophyllum

B. Rafflesia

C. Vanda

D. Rhizobium

3. Rhizomatous stem with spadix inflorescence is seen in

A. Colocasia

B. Cocos

C. Musa

D. Canna

4. True statement regarding Asteraceae members

A. Some flowers are tubular

B. Basal placentation

C. Two bundles of stamens

D. Twisted aestivation

A. B & C

B. D & A

C. C & D

D. A & B

5. Example for a fruit developing from ovary without fertilization

A. Grape

B. Brinjal

C. Banana

D. Pine apple

6. Number of microsporangium in an immature dithecous stamen is/are

A. 8

B. 1

C. 2

D. 4

7. Number of microsporangia in an immature dithecous stamen is/are

A. 4

B. 2

C. 1

D. 8

8. Assertion A : Geitonogamy & Xenogamy can take place in Cocos. Reason R : Cocos is monoecious plant. Pollen may be from same or different plant.

A. Both A and R are true and R is the correct explanation of A.

B. Both A and R are true but R is not the correct explanation of A.

C. A is false, R is true

D. A is true, R is false

9. False statements regarding Natural system of classification

A. Characters of evolutionary importance were not considered

B. Lower the taxon more the groups

C. It is an easy means of identification

D. Floral characters were given greater importance since they are conserved

10. Cell walls of algae contain

A. Cellulose

B. Hemicellulose

C. Galactans

D. Mannans

A. A, B, C

B. A, C, D

C. B, C, D

D. A, B, D

11. Primary meristem that increases the thickness of the stem.

A. Phellogen.

B. Intercalary meristem

C. Apical meristem

D. Cambium

12. True statement regarding vascular cambium is

I. It is both primary and secondary

II. It cuts off cells towards inside and outside

III. Activity of vascular cambium depends on environment

IV. Vascular cambium in stems develop from pericycle.

A. I & IV

B. I, II & III

C. I & II

D. II & III

13. Generally roots are poorly developed in Hydrophytes. Well developed roots in a Hydrophyte is seen in

A. Hydrilla

B. Pistia

C. Wolffia

D. Utricularia

14. Closed vascular bundle but secondary growth is seen in

A. Dicot root

B. Monocot root

C. Monocot stem

D. Dicot stem

15. Histone protein which is not a part of nucleosome core

A. H3

B. H4

C. H2A,H2B

D. H1

16. Common name of Solanum nigrum is

A. Aswagandha

B. Kamanchi

C. Day king

D. Thorn apple

17. A dichogamous flower produced seeds by autogamy. Stigma was receptive from 8 am to 3 pm. Pollen was viable from 1 pm to 7 pm. Pollination might have taken place between.

A. 8 am and 1 pm

B. 1 pm and 3 pm

C. 7 pm and 8 am

D. 3 pm and 7 pm

18. In artificial hybridization emasculation is

A. To make flower into unisexual

B. To encourage cross pollination

C. To stop unwanted pollination

D. To stop self pollination

19. Vegetative fertilization is

A. Triple fusion

B. Embryo directly developing from egg

C. Union of gamete with PEN

D. Union of somatic cells

20. Mericarps are

A. Single seeded pieces of schizocarps

B. Round dry fruits

C. Flat fruits which are wing like

D. Fruits with pappus hairs

21. Rate of the transpiration from the upper surface and lower surface of the leaf can be known by

A. Cobalt chloride experiment

B. Ganong's potometer

C. Ganong's sunscreen

D. Bell jar experiment

22. Cohesion – Tension theory based on

I : Decrease in water potential in mesophyll cells

II : Transpiration pull

III : Water potential gradient between soil solution and xylem

IV : Unbroken water column

A. III & IV

B. I & II

C. II & IV

D. II & III

23. Elements that crosses membrane passively

A. C, H, K

B. C, H, O

C. K, Ca, N

D. N, S, P

24. Total essential mineral elements are

A. 7

B. 6

C. 16

D. 14

25. True statement regarding active site is

A. Many active sites are present on the enzymes

B. These are grooves and pockets in the enzymes

C. Active sites are large areas on the enzymes

D. Active sites are surface areas on enzymes

26. Enzymes that use ATP for their activity is

A. Kinases

B. Hydrolases

C. Synthetases

D. Transferases

27. When incident light is bright

A. Some chloroplasts arrange with their flat surfaces parallel and some perpendicular to the walls.

B. Chloroplasts arrange with their flat surfaces perpendicular to the walls.

C. Chloroplasts arrange with their flat surfaces parallel to the walls

D. Chloroplasts arrange randomly.

28. Dark reactions take place during

A. Night and day as they are biochemical.

B. Night

C. In the presence of light

D. In the absence of the light

29. The co factor that does not participate in the formation of acetyl Co-A is

A. NAD+

B. NADPH

C. Co-A

D. Mg+

30. Aconitase enzyme participates in

A. Cleavage and dehydration

B. Oxidation and hydration

C. Both dehydration and hydration

D. Dehydration

31. Graphical representation of increase in length of the plant against time will be

A. Sigmoid curve

B. Parabola

C. Stationary after primary increase

D. Linear

32. In a week time, a leaf increases 5 times in its surface area. If initial surface area is 4.5 cm^2 the growth rate is

A. 7.714 cm^2

B. 3.214 cm^2

C. 22.5 cm^2

D. 20.25 cm^2

33. Assertion(A): Plasmids usually contain fewer genes Reason(R): Plasmids are much smaller than genophore.

A. A is true, R is false

B. Both A and R are correct but R is not the correct explanation of A.

C. Both A and R are correct and R is the correct explanation of A.

D. A is false, R is true.

34. Uptake and heritable incorporation of a DNA fragment by a bacterial cell is called as

A. Transduction

B. Inoculation

C. Transformation

D. Genetic Engineering

35. In a population of 896 plants %age of genotype AABb is

A. 249

B. 56

C. 336

D. 112

36. A plant with heterozygous dominant for both the characters is crossed with homozygous recessive plant

A. The cross is a back cross

B. The cross is a test cross

C. In the progeny four different phenotypes appear

D. The resulting phenotypes are equal in ratio

A. A, C & D

B. B, C & D

C. A, B & C

D. B & C

37. Chargaff's rule is

A. A+T = G+C

B. A+T/G+C = 1

C. A+G/T+C = 1

D. A/T = G/C

38. Assertion(A): The distance between two strands is always constant in a DNA molecule. Reason(R): Purins always pairs with Pyrimidines.

A. A is true, R is false

B. Both A and R are true and R is the correct explanation of A.

C. A is false, R is true

D. Both A and R are true but R is not the correct explanation of A.

39. Assertion A : Restriction enzymes are used in genetic engineering. Reason R : They cut DNA at specific sites producing complementary sticky ends.

A. Both A, R are true but R is not the correct explanation of A.

B. A is false, R is true

C. A is true, R is false

D. Both A, R are true and R is the correct explanation of A.

40. True statement regarding a DNA introduced into another organism other than its own origin is

A. The DNA is always incorporated into the genome of new organism

B. Can express in another organism

C. Digested as it is alien to the new organism

D. Replicate in the organism on its own.

ZOOLOGY

41. Identify the incorrect statement from the following

A. Frogs and toads have unequal sized limbs but tail absent

B. Caecilians are tailed amphibians but limbs are absent

C. Salamanders have equal sized fore limbs and hind limbs

D. Frogs have sternum but ribs are absent

42. Choose the correct combination from the following

I)Snakes are absent in Newzealand and Ireland

II)Tuatara lizard and Kiwi are present only in Newzealand

III)Marsupials are present only in Australia

IV)Oppossums are found only in South America

A. All are correct

B. Only III is incorrect

C. Only I is correct

D. Only I & II are correct

43. Mark the tissue which is most primitive, omnipresent and called as wear and tear tissue, with little or no intercellular matrix

A. nervous tissue

B. connective tissue

C. muscular tissue

D. Epithelial tissue

44. Cells of germinal epithelium are:

A. columnar

B. squamous

C. cuboidal

D. ciliated

45. Assertion(A): In Cockroach , most of the food is digested in the crop

Reason(R): Crop internally lined with endoderm, which secretes most of digestive enzymes

A. Both A and R are correct and R explains A

B. Both A and R are correct and R does not explains A

C. A is false but R is true

D. A is true, R is false

46. Assertion(A): In Cockroach mosaic vision with more sensitivity but less resolution is present

Reason(R): With the help of several Ommatidia, a cockroach can receive several images of an object

A. A is true, R is false

B. Both A and R are correct and R explains A

C. Both A and R are correct and R does not explains A

D. A is false but R is true

47. Match the following

Valve	Location
A. Tricuspid valve	i) Coronary sinus
B. Bicuspid valve	ii) Left atrioventricular aperture
C. Semi lunar valves	iii) Postcaval vein
D. Eustachian valve	iv) Right atrioventricular aperture
E. Thebesian valve	v) Aortic arch

A. A-iv, B-ii, C-v, D-iii, E-i

B. A-ii, B-i, C-iv, D-ii, E-iii

C. A-iv, B-i, C-ii, D-iii, E-v

D. A-v, B-ii, C-i, D-iv, E-iii

48. Average life span of RBC in man

A. 100 days

B. 120 days

C. 200 days

D. 150 days

49. During pulmonary gas exchange O2 from alveolar air diffuses into blood under the difference of PO2 is

A. 55 mm Hg

B. 5 mm Hg

C. 22 mm Hg

D. 64 mm Hg

50. Assertion (A): Humans can't survive long at an altitude above 6000 meters although the air at that altitude contains 20.95% O2

Reason (R): At an altitude above 6000 meters the PO2 is very low

A. A is false R is true

B. A and R are correct and R is the correct explanation of A

C. A and R are correct and R is not the correct explanation of A

D. A is true R is false

51. Entry of the maximum amount of air into the lungs during normal breathing is due to the contraction of

A. External inter costal muscles

B. Diaphragm

C. Internal inter costal muscles

D. External and internal inter costal muscles

52. Maximum volume of air that can be exhaled after taking the deepest breath possible is called

A. Vital capacity

B. Inspiratory capacity

C. Functional Residual capacity

D. Total lung capacity

53. Which is NOT a correct consequence of surgical removal of portions of these glands?

A. Thymus–decrease in sex drive and changes in secondary sexual characteristics

B. Adrenal cortex–bronzing of skin, no glucose at stress, dehydration and death

C. Parathyroid glands–drop in blood calcium level and tetany (muscles shake)

D. Ovaries–alteration in menstrual cycle and change in secondary sex characteristics

54. Which of the following hormones is considered a glucocorticoid?

A. Cortisol

B. Thyroxin

C. Insulin

D. Aldosterone

55. Identify the correct expression to calculate the net filtration pressure (NFP)

A. BCOP – (GHP + CHP)

B. GHP—(BCOP + CHP)

C. (GHP—CHP) + BCOP

D. (BCOP –CHP) + BCOP

56. The papillae arranged in semicircle at the base of tongue are

A. Filiform

B. Foliate

C. Fungiform

D. Circumvallate

57. Arrange the following parts in the stomach wall in the correct sequence from the outer to the inner side

A. Circular muscle fibers

B. Serosa

C. Muscularis mucosa

D. Oblique muscle fibers

E. Columnar epithelium

F. Longitudinal muscle fibers G. Submucosa

A. B-F-A-D-G-C-E

B. B-F-A-G-D-C-E

C. B-F-A-D-C-G-E

D. B-A-F-D-G-C-E

58. Total number of bones found in human skull is

A. 72

B. 22

C. 35

D. 29

59. Jaw suspension in mammals is

A. craniostylic

B. hyostylic

C. audodiastylic

D. amphistylic

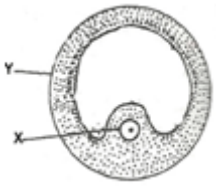
60. In general, parasympathetic activation will produce effects that are _____ to those produced by activation of sympathetic neurons.

A. identical

B. complimentary

C. similar

D. antagonistic



61. Identify the parts of X and Y from the diagram of graffian follicle

A. 1,2

B. X-Tertiary Oocyte, Y – Theca interna

C. X- Secondary oocyte, Y-Theca Externa

D. X-Oogonia, Y – Theca interna

62. Identify the X and Y from the diagram related to spermatogenesis

A. X-Nurse cell, Y – Spermatid

B. X-Sperm, Y – Secondary spermatocyte

C. X-Sertolicell, Y –sperm

D. X-Sertoticell, Y-Spermatogonia

63. Diaphragms are contraceptive devices used by the females. Choose the correct option from the statements given below

i) They are introduced into the uterus

ii) They are placed to cover the cervical region

iii) They act as physical barriers for sperm

A. ii and iii

B. i and iii

C. i and ii

D. iii and iv

64. A: Mother should be blamed for the birth of girls in the family. R: Father is responsible for the sex of the child.

A. Both A and R are true but R is not correct explanation of A.

B. A is true, R is false.

C. Both A and R are true and R is correct explanation of A.

D. A is false, R is true.

65. A man with enlarged breasts, sparse body hair and XXY genotype is suffering from

A. Klinefelter syndrome

B. super male

C. Tuner's syndrome

D. Down's syndrome

66. Which of the following is a symptom of Down's syndrome?

A. Big and wrinkled tongue

B. Many "loops" on finger tips

C. All of these

D. Flat back of head

67. Which of them do not cause variation at genetic level-

A. Natural selection and artificial selection

B. Mutation and recombination

C. Gene migration and drift

D. Panmictic population

68. The raw material for evolution is variability of gene or allele at/in-

A. community

B. gene pool

C. individual level

D. population

69. An alternation in the arrangement of nucleotides in a chromosome, possibly resulting in either a structural or physiological change in the organism, is called:

A. Gene flow

B. Natural selection

C. Genetic drift

D. A mutation

70. A sudden major climatic change would most likely initially result in:

A. A rapid increase in extinction rates

B. An increase in mutation rates

C. A sharp increase in numbers of species

D. A rapid increase in adaptive radiation

71. The distribution of phenotypes for human birth weight is a good example of:

A. disruptive selection

B. directional selection

C. stabilizing selection

D. the founder effect

72. In the human species, a heterozygote advantage is demonstrated by which condition?

A. sickle cell anemia

B. Down syndrome

C. hemophilia

D. Klinefelter syndrome

73. Immunity developed due to transfer of antibodies from mother to the foetus through placenta is

A. Natural acquired passive immunity

B. Natural acquired active immunity

C. Artificially acquired active immunity

D. Artificially acquired passive immunity

74. Incubation period of Hepatitis A is

A. 4 – 26 weeks

B. 2 – 6 days

C. 2 – 22 weeks

D. 2 – 6 weeks

75. Gamma interferons are produced by

A. T lymphocytes

B. Dendritic cells

C. B lymphocytes

D. Macrophages

76. Hepatitis virus whose incubation period is 4-26 weeks is also characterized by

A. Presence of single – stranded RNA

B. Presence of double- stranded RNA

C. Presence of single- stranded DNA

D. Presence of double- stranded DNA

77. In the life cycle of malarial parasite, which of the following will occur in the lumen of the crop of its invertebrate host?

A. Gametogony (gamete formation from gametocytes), exflagellation and anisogamy

B. Exflagellation, sporogony, schizogony

C. Gametogony (formation of gametocytes), sporogony and schizogony

D. Flagellated body, fertilization, sporogony

78. Identify the correct sequence of the following regarding the life cycle of Plasmodium

A. Gametogony (formation of gametocytes), sporogony and schizogony

B. Exflagellation, sporogony, schizogony

C. Gametogony (gamete formation from gametocytes), exflagellation and anisogamy

D. Flagellated body, fertilization, sporogony

79. Which of the following peptide chain is removed during maturation of pro-insulin into insulin?

A. A peptide

B. A & C peptide

C. B peptide

D. C peptide

80. Eli Lilly an American company prepared two DNA sequences corresponding to A & B chains of human insulin & introduced them in plasmids of E.coli to produce insulin chains. Chains A & B were produced separately, extracted & combined by creating

A. H-bonds

B. Peptide bonds

C. Ionic bonds

D. Disulphide bonds

PHYSICS

81. Who discovered Electron?

A. J.C.Bose

B. J.J.Thomson

C. Bohr

D. Albert Einstein

82. Linear Momentum and Angular momentum have the same dimensions in

A. Mass and time

B. Length and time

C. Mass and time

D. Mass and length

83. The measured value of physical quantity expressed to infinite number of decimal places is called

A. real value

B. ideal value

C. Practical value

D. absolute value

84. The numerical ratio of displacement to the distance covered is always

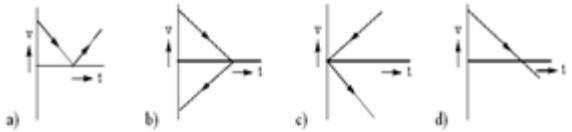
A. equal to or less than one

B. equal to one

C. less than one

D. equal to or greater than one

85. A ball is thrown vertically upwards . Which of the following graph/graphs represent velocity–time graph of the ball during its flight (air resistance is neglected)



A. D

B. B

C. C

D. A

86. Choose the wrong statement

A. Two vectors of different magnitudes can be combined to give a zero resultant

B. The product of a scalar and a vector is a vector quantity

C. All of these

D. Three vectors of different magnitudes may be combined to give a zero resultant

87. A force equal and opposite to the resultant of a number of forces is called

A. moment

B. torque

C. equillibrant

D. couple

88. A car starting from a point travels towards east with a velocity of 36 kmph. Another car starting from the same point travels towards north with a velocity of 24 kmph. The relative velocity of one with respect to another is

A. 30 kmph

B. kmph

C. 20 kmph

D. 12 kmph

89. Two particles are projected from the same point with the same speed at different angles θ_1 and θ_2 to the horizontal. If their respective times of flights are T_1 and T_2 and horizontal ranges are same
then

a) $\theta_1 + \theta_2 =$ 90°

b) $T_1 = T_2 \tan \theta_1$

c) $T_1 = T_2 \tan \theta_2$

d) $T_1 \sin = \theta_2\ T_2\ \theta_1$

A. a, b, c are correct

B. a, b, d are correct

C. a, c, d are correct

D. b, c, d are correct

90. A): Time taken by the bomb to reach the ground from a moving aeroplane depends on height of aeroplane only

R): Horizontal component of velocity of bomb remains constant and vertical component of velocity of bomb changes due to gravity

A. (A) is true but (R) is false

B. (A) is false but (R) is true

C. Both (A) and (R) are true and (R) is the correct explanation of (A)

D. Both (A) and (R) are true and (R) is not the correct explanation of (A)

91. A rope of length L is pulled by a constant force F. The tention in the rope at a distance x from the end where the force is applied is

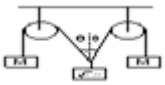
A. F(L-x)/L

B. FL/x

C. Fx/(L-x)

D. FL/(L-x)

92. In the given arrangement, for the system to remain under equilibrium, the ” should be (IIT 2001)



A. 45°

B. 30°

C. 0°

D. 60°

93. The coefficient of static friction is

A. always negative

B. always greater than one

C. usually less than one

D. always less than one

94. A block of mass M is resting on an inclined plane. When the angle of inclination is gradually increased to θ, the block just begins to slide down the plane. What minimum force applied parallel to the plane on the block would just make the block move up the plane?

A. Mg sin θ

B. 2Mg cos θ

C. Mg cosθ

D. 2Mg sin θ

95. Two masses A and B of 10 kg and 5 kg respectively are connected with a string passing over a frictionless pulley fixed at the corner of a table as shown. The coefficient of static friction of A with table is 0.2.The minimum mass of C that may be placed on A to prevent it from moving is

A. 12 kg

B. 15 kg

C. 10 kg

D. 5 kg

96. Many great rivers flow towards the equator, what effect does the sediment they carry to sea have on the rotation of the earth?

A. The rotation of the earth slows down

B. No effect on the rotation of the earth

C. none

D. The rotation of theearth speeds up

97. Two springs have their force constants k_1 and k_2 and they are stretched to the same extension. If $k_2 > k_1$ work done is

A. same in both the springs

B. more in spring K_2

C. more in spring K_1

D. none

98. The bob (mass m) of a simple pendulum is imparted a horizontal velocity $u = \sqrt{5gl}$ where is the length of the pendulum. the tension in the string will be (a) 6 mg wt at the bottom

(b) zero at the top

(c) 4 mg wt in the horizontal

direction

(d) 5 mg wt at 60o with the downward

vertical

A. c & c

B. a & b

C. b & d

D. a & d

99. When two bodies of same mass undergo head on elastic collision

A. their velocities are interchanged

B. all the above are true

C. their momenta are interchanged

D. their velocities are interchanged

100. Centre of mass of a body

A. always lies outside the body

B. always lies on the surface of the body

C. may lie inside or outside the body

D. always lies inside the body

101. Moment of inertia of a body depends upon

A. position of axis of rotation

B. all of the above

C. temperature of the body

D. distribution of mass of the body

102. Find the false statement

A. Gravitational force forms an action- reaction pai

B. Gravitational force acts along the line joining the two interacting particles

C. Gravitational force does not obey the principle of superposition

D. Gravitational force is independent of medium

103. The weight of an object in the coal mine, sea level and at the top of the mountain are respectively W_1, W_2 and W_3, then

A. $W_1<w_2<w_3<$ w<="" w="" <="" span="" style="box-sizing: border-box; padding: 0px; margin: 0px;"></$w_2<w_3<>$

B. W1=W2=W3

C. $W_1< W_2>W_3$

104. If an astronaut comes out of the artificial satellite, then

A. He flies off tangentially

B. He falls to the earth

C. He performs SHM

D. He continues to move along the satellite in the same orbit

105. Two unit negative charges are placed on a straight line. A positive charge q is placed exactly at the midpoint between these unit charges. If the system of these three charges is in equilibrium, the value of q (in C) is

A. 0.5

B. 1

C. 0.75

D. 0.25

106. A cell in secondary circuit gives null deflection for 2.5 m length of potentiometer having 10m length of wire. If the length of the potentiometer wire is increased by 1m without changing the cell in the primary, the position of the null point now is:

A. 3.5m

B. 2.0m

C. 3m

D. 2.75m

107. Two similar bar magnets P and Q each of magnetic moment M are taken. If P is cut along it axial line and Q is cut along its equatorial line, all the four pieces obtained have each of

A. Magnetic moment M

B. Magnetic moment M/2

C. Magnetic moment M/4

D. Equal pole strength

108. A vertical straight conductor carries a current vertically upwards. A point P lies to the east of it at a small distance and another point Q lies to the west at the same distance. The magnetic field at P neglecting earth's field is:

A. Same as at Q

B. Less than at Q

C. Greater than at Q

D. Greater or lesser than that at Q, depending upon the strength of current

109. The potential difference V and the current i flowing through an instrument in an ac circuit of frequency f are given by $V=5\cos\omega t$ volts and $I = \sin \omega t$ amperes (where $\omega = 2\pi f$). The power dissipated in the instrument is

A. 5 W

B. 2.5 W

C. Zero

D. 10 W

110. If the flux of magnetic induction through each turn of a coil of resistance R and having N turns changes from φ_2 to φ_2 then the magnitude of the charge that passes through the coil is

A. $\frac{NR}{\varphi_2 - \varphi_1}$

B. $\frac{\varphi_2 - \varphi_1}{R}$

C. $\frac{N(\varphi_2 - \varphi_1)}{R}$

D. $\frac{\varphi_2 - \varphi_1}{NR}$

111. The frequencies of X-rays, ?- rays and ultraviolet rays are respectively a, b and c. Then:

A. a < b , b > c

B. a > b, b < c

C. a < b, b < c

D. a > b, b > c

112. The refractive index of the material of a double convex lens is 1.5 and its focal length is 5 cm. If the radio of curvature are equal, the value of the radius of curvature (in cm) is

A. 8

B. 6.5

C. 5

D. 9.5

113. An electron beam travels with a velocity of 1.6 x 10^7 ms^{-1} perpendicularl to magnetic field of intensity 0.1 T. The radius of the path of the electron beam (m_e = 9 x10^{-31} kg)

A. 9 x 10^{-5} m

B. 9 x 10^{-3} m

C. 9 x 10^{-4} m

D. 9 x 10^{-2} m

114. In sun, the important source of energy is

A. nitrogen-nitrogen cycle

B. proton-proton cycle

C. carbon-nitrogen cycle

D. carbon-carbon cycle

115. Among the following one statement is not correct when a junction diode is in forward bias

A. holes on p -side move towards the junction

B. electron on n- side and holes on p-side will move away from junction

C. the width of depletion region decreases

D. free electron on n- side will move towards the junction

116. Who discovered Neutron?

A. Fermi

B. James Chadwick

C. S.N.Bose

D. Millikan

117. The angle subtended at the centre of a circle by an arc whose length is equal to the diameter of the circle is

A. π/2 radian

B. radian

C. π radian

D. 2 radian

118. Zero error of measuring instruments are called

A. Instrumental error

B. Indeterminate error

C. Disproportional error

D. Random error

119. Which of the following four statements is false.

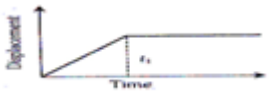
A. The direction of the velocity of a body can change when its acceleration is constant.

B. A body can have zero velocity and still be accelerated.

C. A body can have a constant speed and still have a varying velocity.

D. A body can have a constant velocity and still have a varying speed.

120. The x – t graph shown in figure represents.



A. constant velocity

B. the body travels with constant speed up to time t1 and then stops

C. velocity of the body is continuously changing.

D. instantaneous velocity

CHEMISTRY

121. Two elements X (at.wt = 75) and Y (at.wt = 16) combine to give compound having 75.8% X. The compound is

A. X_2Y

B. X_2Y_3

C. XY

D. X_2Y_2

122. Atomic weight of a metal M is 56. The empirical formula of its oxide containing 70% of M is

A. MO_4

B. M_2O_3

C. M_3O_2

D. MO_2

123. Law of reciprocal proportion was given by

A. Lavoiser

B. Proust

C. Ritcher

D. Dalton

124. The following data are avaiable % of Mg in MgO and in $MgCl_2$ % if C in CO & CO_2 % of Cr in $K_2Cr_2O_7$& K_2CrO_4 The law of multiple proportions may be illustrated by data

A. c only

B. b only

C. a and b

D. b & d

125. When 50 grams of sulphur was burnt in air, 4% of the impure residue is left over. Calculate the volume of air required at STP containing 21% of oxygen by volume.

A. 80lit

B. 160lit

C. 120lit

D. 200lit

126. What is the weight of calcium carbonate required for the production of 1 L of carbon dioxide at 27oC and 750mm, by the action of dilute hydrochloric acid?

A. 2.45gm

B. 4.009gm

C. 40.09gm

D. 8 .018gm

127. Maximum number of electrons that can be possible in N – shell is

A. 18

B. 32

C. 50

D. 8

128. Number of nodal planes and radial nodes possible for a 3p-orbital are respectively

A. 0,1

B. 2,1

C. 1,1

D. 1 ,2

129. The ratio of energies of photons with wavelengths $2000A^0$ and $4000A^0$ is

A. 1:04

B. 2:1

C. 4:01

D. 1:2

130. The kinetic energy of the ejected electrons in photoelectric effect is

A. Directly proportional to the wavelength of the incident radiation

B. Inversely proportional to the frequency of the incident radiation

C. Directly proportional to the frequency of the incident radiation

D. Not related to the frequency of the incident radiation

131. If an element 'X' is assumed to have the types of radii, then their order is

A. Covalent radius > Crystal radius > Van der waals radius

B. Van der waals radius > Crystal radius > Covalent radius

C. Van der waals radius > Covalent radius > Carystal radius

D. Crystal radius > Van der waals radius > Covalent radius

132. The correct order of variation in the sizes of atoms is

A. Be > C > F < Ne

B. Be>C>F>Ne

C. F> Ne > Be >C

D. Be < C < F < Ne

133. The chalcogen with highest electron affinity is

A. O

B. S

C. Se

D. Te

134. The element with highest electron affinity in the following

A. Nitrogen

B. Chlorine

C. Fluorine

D. Oxygen

135. The e/m of proton is

A. 19.14×10^4 c/g

B. 1.78×10^8 c/g

C. 0.478×10^4 c/g

D. 9.57×10^4 c/g

136. Atomic number is equal to the

A. number of protons in the nucleus

B. sum of protons and neutrons

C. number of neutrons in the nucleus

D. atomic mass of the element.

137. The de Broglie wave length of a an Iron ball of mass 2 mg moving with a velocity of 2Km/sec is

A. $\frac{6.6 \times 10^{-30}}{4} m$

B. $\frac{6.6 \times 10^{-31}}{4} m$

C. $\frac{6.6 \times 10^{-27}}{4} m$

D. $\frac{6.6 \times 10^{-34}}{4} m$

138. The de- Broglie's wavelength of a particle having momentum of 3.3125×10^{-24} kg.ms^{-1} will be

A. 2 nm

B. 2×10^{-10}A°

C. 2×10^{-10}cm

D. 2 A°

139. When 4s orbital in any atom is filled completely, the next electron goes to

A. 3d

B. 5s

C. 4f

D. 4d

140. Number of electrons with +1/2 spin in n=3 is

A. 9

B. 3

C. 1

D. 18

141. Which of the following term means pain killing?

A. Penicillin

B. Antibiotic

C. Antipyretic

D. Analgesic

142. Paracetamol is

A. Both antipyretic acid analgesic

B. Antimalarial

C. Antipyretic

D. Analgesic

143. A high molecular weight molecule which does not contain repeating structural units is called a

A. Both 1 & 2

B. Polymer

C. None of the above

D. Macromolecule

144. The simple molecules from which a polymer is made are called

A. Enantiomers

B. Rotamers

C. Metamers

D. Monomers

145. During acetylation of glucose it needs x moles of accetic anhydride. The value of 'x' would be

A. 5

B. 6

C. 1

D. 3

146. Equlibrium mixture of glucose consists

A. 64% and 36%

B. 50% and 50%

C. 36% and 64%

D. 20% and 85%

147. Which of the following has maximum complex forming ability with a given metal ion?

A. SbH_3

B. BiH_3

C. PH_3

D. NH_3

148. Which of the following does not show allotropy?

A. Antimony

B. Phosphorus

C. Arsenic

D. Bismuth

149. The atomic number of sulphur is 16, in the ground state of sulphide ion, the electronic configuration is

A. $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^6$

B. $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^4$

C. $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3s^4\ 3p^6$

D. $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^2$

150. The electronic configuration represents which one of the following:

A. The ground state of F^- ion

B. An excited state O^{2-} ion

C. The ground state of neon

D. An excited state of fluorine atom

151. Dry and fused KHF_2 on electrolysis gives

A. H_2 at cathode and F_2 at anode

B. H_2 at anode and F_2 at cathode

C. Both H_2 and F_2 at cathode

D. H_2 at cathode and O_2

152. KF combines with HF to from KHF_2. The compound contains the species:

A. K^+, F^- and H^+

B. K^+ and $(HF_2)^-$

C. $[KHF]^+$ and$^-$ F

D. K^+, F^- and HF

153. Three metals X, Y and Z are crystallised in simple cubic, B.C.C and F.C.C lattices respectively. The number of unit cells in one mole each of the metals respectively

A. 4N, 2N, N

B. N, 2N, 4N

C. N, N/2, N/4

D. N/4, N/2, N

154. The crystal system without any element of symmetry is

A. hexagonal

B. cubic

C. Monoclinic

D. triclinic

155. Equivalent weight of hypo in the reaction $Na_2S_2O_3 + Cl_2 + H_2O \rightarrow Na_2SO_4 + 2HCl + S$ if M is molecular weight of hypo is

A. M/2

B. 2M

C. M

D. M/3

156. Molarity of pure water(density = 1gm/ml) is

A. 4M

B. 55.6M

C. 40M

D. 25M

157. X is a non- volatile solute and Y is a volatile solvent. The following vapour pressures are observed by dissolving X in Y . The correct of vapour pressure is

X/mol lit^{-1}	Y/mm of Hg
0.10	P_1
0.25	P_2
0.01	P_3

A. $P_2 < P_1 < P_3$

B. $P_1 < P_2 < P_3$

C. $P_3 < P_1 < P_2$

D. $P_3 < P_2 < P_1$

158. Which of the following solutions will have the lowest vapour pressure?

A. 0.1 M $Al_2 (SO_4)_3$

B. 0.1M NaCl

C. 0.1 M $BaCl_2$

D. 0.1M Glucose

159. The atomic number of Eka Aluminium is

A. 21

B. 25

C. 31

D. 32

160. Which of the following metal can give X-rays of highest frequency

A. Zn

B. Ca

C. Fe

D. Al