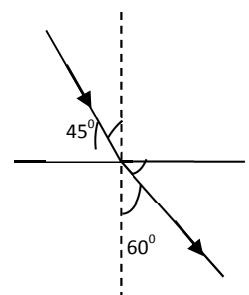
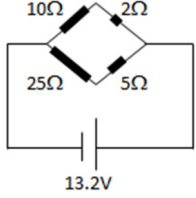
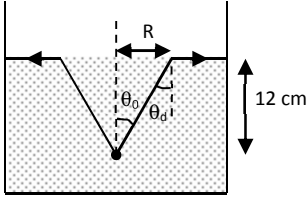


01. If a wire of resistance 4Ω is melted and recast to half its length, by using entire material available the new resistance of wire will be
 (A) 1Ω (B) 2Ω
 (C) 8Ω (D) can't be said as area is not known
02. When a force retards the motion of a body, the work done is
 (A) Positive (B) zero (C) negative (D) undefined
03. If electric current is compared with flow of water then the flow of electron can be seen as flow of "____", the tab can be compared with "____" and positive terminal of source can be considered as point at "____".
 (A) "water", "bulb" "upper level" (B) "current", "resistance" "positive potential"
 (C) "water", "key" "upper level" (D) "negative charges", "T-joint" "upper level"
04. Which of the following statements is true?
 (A) A convex lens has 4 dioptrpower having a focal length 0.25 m
 (B) A convex lens has -4 dioptrpower having a focal length 0.25 m
 (C) A concave lens has 4 dioptrpower having a focal length 0.25 m
 (D) A concave lens has -4 dioptrpower having a focal length 0.25 m ven
05. A light ray is incident at an angle of incidence i from a denser medium to a rarer medium so that reflected and refracted rays make an angle 90° mutually with each other. The angle of reflection & refraction are r & r' respectively. Then the critical angle is
 (A) $\tan^{-1}(\sin i)$ (B) $\sin^{-1}(\tan i)$ (C) $\sin^{-1}(\tan r)$ (D) $\sin^{-1}(\cot r)$
06. An aeroplane flying at height of 20,000 m at a speed of 300km h^{-1} has
 (A) only potential energy (B) only kinetic energy
 (C) both, potential and kinetic energy (D) none of the above
07. Which of the following is mathematical equation of Ohm's law?
 (A) $V = IR$ (B) $I = RV$ (C) $V = I^2R$ (D) both (A) and (B)
08. The ratio of thickness of plates of two transparent medium A & B is 6:4. If light takes equal time in passing through them, then refractive index of B w.r.t. A will be
 (A) 1.33 (B) 1.75 (C) 1.4 (D) 1.5
09. The device which is used for converting mechanical energy into electrical energy is called:
 (A) electric motor (B) Electric generator (C) transformer (D) battery
10. Two conductors of resistance $R\Omega$ are connected in series and then in parallel. The ratio of the resistance in series and parallel combination is:
 (A) 1 (B) 2 (C) 4 (D) 6
11. An object 4cm high is placed on optical bench (an instrument used in optical experiments as shown in figure) at a mark indicating 20cm in front of a convex mirror which is placed at a mark 35cm. The radius of curvature of mirror is 10 cm. Then the image formed will be at the mark given by
 (A) 3.75 cm (B) 32.25 cm
 (C) 7.5 cm (D) 38.75 cm
12. The danger signals installed at the top of tall buildings are red in colour. These can be easily seen from a distance because among all other colours, the red light
 (A) is scattered the most by smoke or fog (B) is scattered the least by smoke or fog
 (C) is more sensitive for retina (D) moves fastest in air
13. Vasundhara is standing in front of a magic mirror. She finds the image of her head bigger, the middle portion of her body of the same size and that of the legs smaller. The following is the order of combinations for the magic mirror from the bottom.
 (A) Plane, convex and concave (B) Convex, concave and plane
 (C) Concave, plane and convex (D) Convex, plane and concave
14. Figure shows a ray of light as it travels from medium B to medium A. Refractive index of the medium B relative to medium A is
 (A) $\frac{\sqrt{3}}{\sqrt{2}}$ (B) $\frac{\sqrt{2}}{\sqrt{3}}$ (C) $\frac{\sqrt{1}}{\sqrt{2}}$ (D) $\sqrt{2}$

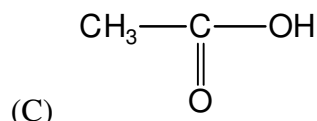
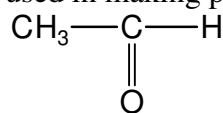


15. Which of the following can make a parallel beam of light when light from a point source is incident on it?
 (A) Concave mirror as well as convex lens (B) Convex mirror as well as concave lens
 (C) Two plane mirrors at 90° to each other (D) Concave mirror as well as concave lens
16. A coin and a feather are dropped together in a vacuum. Then
 (A) The coin will reach the ground first (B) The feather will reach the ground first
 (C) Both will reach the ground at the same time (D) The feather will not fall down
17. A racing car has a uniform acceleration of 4m/s^2 . The distance covered by the car in 10 seconds after the start is:
 (A) 200m (B) 100m (C) 300m (D) 400m
18. The current through 2 ohm resistance will be
 (A) 1.2 A
 (B) 1.4 A
 (C) 0.4 A
 (D) 1.0 A
- 
19. A fish looking up through the water sees the outside world contained in a circular horizon. If the refractive index of water is $4/3$ and the fish is 12 cm below the surface, the radius of this circle in cm is
 (A) $36\sqrt{5}$ (B) $4\sqrt{5}$
 (C) $36\sqrt{7}$ (D) $36/\sqrt{7}$
- 
20. Which of the colours of visible light has minimum wavelength?
 (A) Violet (B) red (C) yellow (D) green
21. Electron volt is a measure of:
 (A) Charge (B) Current (C) Electric potential (D) Energy
22. A circular disk of copper has a symmetrical hole at its centre. The disc is uniformly heated. The diameter of the hole will
 (A) increase (B) decrease (C) remain the same (D) None of these
23. In case of a moving body
 (A) displacement = distance (B) displacement \geq distance
 (C) displacement \leq distance (D) displacement < distance
24. Two bodies of masses 1 kg and 4 kg have equal kinetic energies. The ratio of their momentum is:
 (A) 4 : 1 (B) 1 : 4 (C) 2 : 1 (D) 1 : 2
25. The power of a lens whose focal length is 25 cm is :
 (A) 4 Dioptre (B) 25 Dioptre (C) 0.04 Dioptre (D) 2.5 Dioptre
26. The acidity problem can be controlled by adding basic substances like____
 (A) NaOH (B) antacids (C) sodium carbonates (D) all of the above
27. ____is used in medicine such as tincture iodine, cough syrups and many tonics.
 (A) Methanol (B) ethanol (C) acetic acid (D) all
28. The correct decreasing order of reactivity of the elements is
 (A) $\text{Zn} > \text{Fe} > \text{Al} > \text{Cu}$ (B) $\text{Cu} > \text{Fe} > \text{Al} > \text{Zn}$
 (C) $\text{Al} > \text{Zn} > \text{Fe} > \text{Cu}$ (D) $\text{Fe} > \text{Al} > \text{Zn} > \text{Cu}$
29. Valency of potassium and boron is/are:
 (A) 3, 2 (B) 1, 3 (C) 1, 2 (D) both having 2 valency
30. The ratio of weights of Hydrogen and Oxygen in H_2O_2 is ____
 (A) 8:1 (B) 1:8 (C) 1:9 (D) 1:16
31. When dry slaked lime reacts with chlorine gas, it forms____
 (A) washing soda (B) bleaching powder (C) soap (D) all of the above
32. In the reaction: $\text{MnO}_2 + 4\text{HCl} \rightarrow \text{MnCl}_2 + 2\text{H}_2\text{O} + \text{Cl}_2$, HCl gets ____to Cl_2 .
 (A) reduced (B) oxidized
 (C) both oxidized and reduced (D) none of these
33. Which of the following methods is suitable for preventing an iron vessel from rusting ?
 (A) Applying grease (B) Applying paint
 (C) Applying a coating of zinc (D) All the above

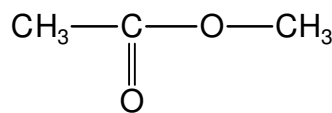
34. Which of the following is a sweet smelling substance used in making perfumes?

(A) CH_3OH

(B)



(D)



35. Take about 1.0gm of CaCO_3 in a test tube. Heat it over a flame, it gives quicklime with a colorless CO_2 gas. The reaction is called as__

(A) decomposition reaction

(B) displacement reaction

(C) double decomposition reaction

(D) double displacement reaction

36. The acidity problem can be controlled by adding basic substances like__

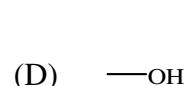
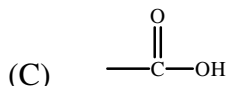
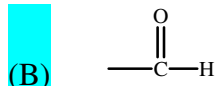
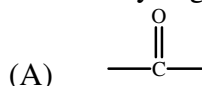
(A) NaOH

(B) antacids

(C) sodium carbonates

(D) all of the above

37. The aldehyde group is



38. The corrosion of Fe due to the formation of

(A) FeO

(B) Fe_3O_4

(C) $\text{Fe}_2\text{O}_3 \cdot x\text{H}_2\text{O}$

(D) $\text{Fe}(\text{OH})_3$

39. Valency of He, Ne gases is/are:

(A) 0

(B) 1

(C) 2

(D) 0 & 1

40. 'Cerium' belongs to__

(A) non-metal

(B) metal

(C) transition metal

(D) lanthanide

41. _____ are different forms of carbonate?

(A) limestone

(B) chalk

(C) marble

(D) all of the above

42. The process of alkaline hydrolysis of oils or fats is known as__

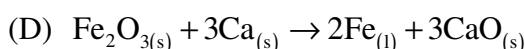
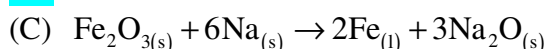
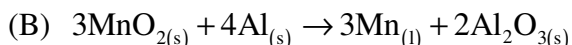
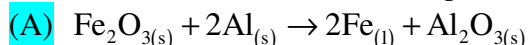
(A) hydrolysis

(B) acidification

(C) esterification

(D) none of the above

43. The reaction involved in thermite process is



44. Which of the following compound is used to dry a gas in the laboratory?

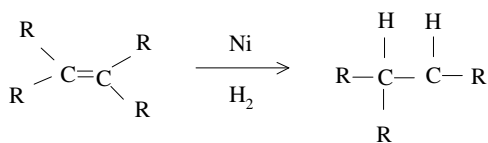
(A) CaSO_4

(B) NaHCO_3

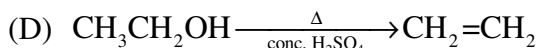
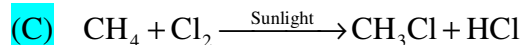
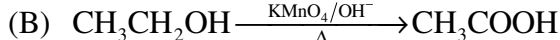
(C) NaOH

(D) CaCl_2

45. Which of the following is a substitution reaction?



(A)



46. Esters are sweet smelling substance which reacts in presence of acid or base to give back__?

(A) carboxylic acid

(B) alcohol

(C) Ketone

(D) both (A) & (B)

47. Which of the following is hardest natural substance?

(A) Boron

(B) Graphite

(C) Diamond

(D) Fullerene

48. In the reaction: $\text{MnO}_2 + 4\text{HCl} \rightarrow \text{MnCl}_2 + 2\text{H}_2\text{O} + \text{Cl}_2$, HCl gets ____ to Cl_2 .

(A) reduced

(B) oxidized

(C) both oxidized and reduced

(D) none of these

49. Our body works within the pH range?

(A) 7.0 to 7.8

(B) 3.8 to 7.2

(C) 7.4 to 8.4

(D) none of the above range

50. Oil of vitriol is

(A) H_2SO_4

(B) HCl

(C) HNO_3

(D) CH_3COOH

51. Main function of lenticels is
 (A) Transpiration only (B) guttation
 (C) bleeding (D) gaseous exchange
52. Bees are important to agriculture as they
 (A) Produce wax (B) Perform pollination
 (C) Prevent pollination (D) Produce honey
53. Population limited to a particular area is known as
 (A) Endemic (B) Pandemic (C) Natural (D) Alien
54. What is relative contribution of CO₂, CH₄, CFC and N₂O to global warming?
 (A) 20%, 14%, 60%, 6% (B) 14%, 6%, 20%, 60%
 (C) 6%, 14%, 20%, 6% (D) 60%, 20%, 14%, 6%
55. Rough endoplasmic reticulum is involved in
 (A) Lipid synthesis (B) Starch synthesis
 (C) Protein synthesis (D) Carbohydrate synthesis
56. It is true for gibberellins & cytokinin . . .
 (A) both are plant growth hormones (B) one promotes growth other inhibit
 (C) they required in large quantity (D) both inhibit growth of plant
57. Communication in plants is
 (A) electrical (B) chemical (C) electrical & chemical (D) none of these
58. In human heart oxygenated & deoxygenated blood get mixed together in _____
 (A) Right ventricle (B) Left atrium (C) pulmonary artery (D) never get mixed
59. Valves in the heart always maintain _____
 (A) multidirectional flow of blood (B) unidirectional flow of blood
 (C) balance of heart (D) none of these
60. When the muscular diaphragm of the body contracts _____ take place.
 (A) Exhalation (B) Circulation (C) Contraction of rib-cage (D) Inhalation
61. In plants ____ a ____ is a food conducting tissue & ____ b ____ is a water conducting tissue.
 (A) a- xylem , b- collenchyma (B) a- phloem , b- mesophyll
 (C) a- phloem , b- xylem (D) a- sclerenchyma , b- palisade
62. _____ is the smallest functional unit of human kidney.
 (A) cortex (B) nephron (C) medulla (D) ureter
63. Urine from kidney reaches urinary bladder through tube like structure called _____
 (A) urethra (B) convoluted tubule
 (C) ureter (D) uriniferous tubule
64. The growth of pollen tube towards ovule is an example of _____
 (A) Phototropism (B) chemotropism (C) heliotropism (D) gravitropism
65. Long form of ANS is -
 (A) Automatic Nero System (B) Autonomic Neuron System
 (C) Automatic Nervous Server (D) Automatic Nervous System
66. Lactic acid is a _____ carbon compound.
 (A) 06 (B) 02 (C) 03 (D) 04
67. _____ is a plant waste material.
 (A) Rubber (B) Sandal wood oil (C) Gum (D) all of these
68. An organism which show extracellular digestion -
 (A) Sundew plant (B) Yeast (C) Mushroom (D) all of these
69. Which among the following are correctly matched purine pairs?
 (A) Adenine-Cytosine (B) Cytosine-Uracil
 (C) Guanine-Thymine (D) Guanine-Adenine
70. Apical dominance is due to
 (A) ABA (B) Auxin (C) Ethylene (D) Gibberellins
71. Which of the following events does not occur exclusively during light reaction of photosynthesis?
 (A) Photolysis of water (B) Transduction of light energy
 (C) Absorption of solar energy (D) Reduction of carbon dioxide

72. Match the following

	Column I		Column II
A	Multiple fission	i	Yeast
B	Regeneration	ii	Hydra
C	Fragmentation	iii	Spirogyra
D	Budding	iv	<i>Plasmodium</i>

(A) A-iv, B-ii, C-iii, D-i

(B) A-i, B-ii, C-iii, D-iv

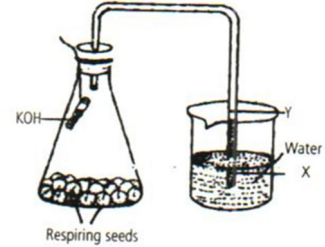
(C) A-ii, B-iii, C-iv, D-i

(D) A-iv, B-i, C-iii, D-ii

73. Vegetative propagation method in which the cut stems of two different plants are joined together is

(A) Fragmentation (B) Layering (C) Grafting (D) Cutting

74. Rise in the water level from X to Y in the given experimental set – up demonstrates

(A) aerobic respiration
(B) anaerobic respiration
(C) photosynthesis
(D) chemosynthesis

75. Vermiform appendix in humans arises from

(A) ileum (B) caecum (C) duodenum (D) jejunum

76. The organism which derive nutrition from other organism without killing it but can harm is

(A) Leech (B) Lice (C) *Cuscuta* (D) all of these

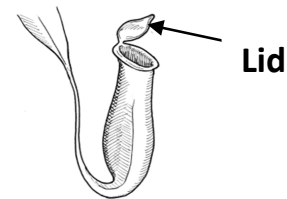
77. Short term memory lasts for _____

(A) 30 nano seconds (B) 30 seconds (C) 30 minutes (D) 30 days

78. Neurons which conduct impulses from the brain & spinal cord to effector gland or muscle is

(A) Sensory neuron (B) Motor neuron (C) Association neuron (D) none

79. Lid closing of lid in pitcher Plant is movement

(A) seismonastic (B) tropic
(C) thigmonastic (D) lid never closes

80. It is true for gibberellins & cytokinin . . .

(A) both are plant growth hormones (B) one promotes growth other inhibit
(C) they required in large quantity (D) both inhibit growth of plant

81. Choose correct sentence -

(A) saliva sometimes show acidic nature (B) In saliva blue litmus turn red
(C) In saliva red litmus turn blue (D) Saliva do not take part indigestion

82. Nitrogen is essential for -

(A) pitcher plant (B) legume plant (C) both A & B (D) all organisms

83. The salivary gland which lies just in front of the ear is

(A) Parotid gland (B) Sub-mandibular gland
(C) Sub-lingual gland (D) Sub-maxillary gland

84. Select the features that are COMMON in amphibians and pisces?

(i) Body covered by scaly exoskeleton (ii) They are cold blooded animals
(iii) Both respire through gills only (iv) Brain is covered by cranium
(A) i, ii, and iv (B) ii and iv (C) ii and iii (D) iii and iv85. What will be the blood group of the individual if its genotype is $I^A I^B$?

(A) A (B) O (C) AB (D) B

86. Amniocentesis is an important diagnostic technique in India done legally as it

(A) Helps in fetal sex determination (B) Prevents unwanted pregnancies
(C) Determines the cause of infertility
(D) Helps in detecting chromosomal disorders in fetus

87. During inspiration in mammals, the sternum moves:

(A) backward and downward (B) backward and upward
(C) forward and upward (D) forward and downward

88. Head of human sperm has

(A) mitochondria (B) nucleus (C) tail (D) centrioles

89. Which of the following has the thickest walls?

(A) Right ventricle (B) Left ventricle (C) Right auricle (D) Left auricle

90. Largest gland in the human body is -
(A) Skin (B) Pituitary (C) Stomach **(D) None of these**
91. The digested food is absorbed by the _____ in the small intestine.
(A) Villi (B) Glycogen (C) Caecum (D) Duodenum
92. Artery takes blood to the lungs for oxygenation -
(A) Ventricular **(B) Pulmonary** (C) Capillary (D) Coronary
93. Choose the correct statement related to human digestive system.
(A) Only saliva makes the food alkaline (B) Gastric juice is alkaline & saliva is acidic in nature
(C) Bile & saliva makes the food alkaline (D) none of these
94. The nerves present in organs like heart, lungs, Stomach belong to . . .
(A) CNS (B) PNS **(C) ANS** (D) all .
95. If a person is in hanging position upside down. In this position if tried to swallow food. Will that food reach in his stomach?
(A) No, in human digestive system, food cannot travel against gravity.
(B) food is a non-living substance it cannot exert much force to reach the stomach
(C) No, because peristaltic movement of esophagus is always upside to downside
(D) food will reach stomach due to rhythmic contraction & relaxation of muscles of esophagus.
96. Length of intestine of _____ is relatively shorter than herbivorous animals like cow.
(A) Lion (B) Tiger (C) Leopard **(D) all**
97. In plants the unutilized carbohydrates are -
(A) stored in form of glycogen **(B) stored in form of starch**
(C) thrown out as waste material (D) absent
98. Choose the correct sequence of air from nose to lungs.
(A) Larynx → Pharynx → Trachea → Bronchi
(B) Nose → Larynx → Pharynx → Trachea → Bronchi
(C) Nose → Trachea → Pharynx → Larynx → Bronchi
(D) Pharynx → Larynx → Trachea → Bronchi → Bronchioles
99. Valves in the heart always maintain _____
(A) multidirectional flow of blood **(B) unidirectional flow of blood**
(C) balance of heart (D) none of these
100. Right side of your heart is towards _____
(A) your right side (B) your left side (C) diaphragm (D) both A & C