

Common Entrance Test Sample Paper

SET-1

(BIOLOGY)

1. Cell theory was proposed by

1. Schleiden and Schwann
2. Robert hooke
3. Leeuwenhock
4. Brown

Ans-1

2. Scientists name plants and animals in latin to

1. Claim superiority over common name
2. Achieve international infirmity
3. Prevent common man from understanding
4. Make the name difficult

Ans-2

3. Transpiration in plants will be most rapid when

1. Atmosphere is saturated with water vapour
2. Excess of water is in the soil
3. The environmental conditions are dry
4. The environment is cool and humid

Ans-3

4. Dioxyribose is found in

1. RNA
2. DNA
3. ATP
4. ADP

Ans-2

5. The edible part of jack fruit is

1. Fleshy perianth
2. Inflorescence axis
3. Mesocarp

4. None of these

Ans-1

6. Pith is well developed in

1. Monocot root
2. Monocot stem
3. Dicot root
4. Seeds

Ans-1

7. Thallophyta includes

1. Algae and fungi
2. Fungi and ferns
3. Algae and ferns
4. Only algae

Ans-1

8. Epiphyllous buds mean those buds which grow

1. On the internode of the leaves
2. In the axil of the leaves
3. On the surface of the leaves
4. None of the above

Ans-3

9. The chromosomes that do not have a centromere are

1. Sub metacentric
2. Telocentric
3. acentric
4. metacentric

Ans-3

10. Vascular bundles are scattered in

1. monocot root
2. dicot root
3. monocot stem
4. dicot stem

Ans-3

11. The movement of water from the roots to the aerial parts of plants is

1. transpiration
2. transportation
3. translocation
4. evaporation

Ans-3

12. Plants release energy during

1. photosynthesis
2. transpiration
3. absorption
4. respiration

Ans-4

13. Root hairs are

1. multicellular
2. bicellular
3. unicellular
4. none of these

Ans-3

14. Whose is the father of genetics?

1. Charles Darwin
2. Aristotle
3. Mendel
4. Hugo de vries

Ans-3

15. DNA model was proposed by

1. Mendel
2. Hogo de vries
3. Prantle and engler
4. Watson and crick

Ans-4

16. The triplet of bases in DNA that code for certain amino acids, together are called

1. Codon

2. Anticodon
3. Nitrogenous base
4. Nucleotide

Ans-1

17. The base that is not found in DNA, but found in RNA is

1. Thymine
2. Uracil
3. Adenine
4. Guanine

Ans-2

18. Who is the father of classification (taxonomy)?

1. Linnaeus
2. Lemarck
3. Darwin
4. Engler

Ans-1

19. Which one of the following is a structural protein?

1. Keratin
2. Haemoglobin
3. Amino acid
4. Gelatin

Ans-1

20. The edible portion of mango fruit is

1. Endocarp
2. Mesocarp
3. Epicarp
4. Seed

Ans-2

21. The gynoecium of pea has

1. One carpel
2. Two carpels
3. Three carpels

4. Many carpels

Ans-1

22. The fruits that are formed without fertilization are

1. Parthenocarpic
2. Multiple fruits
3. Simple fruits
4. Dry fruits

Ans-1

23. If a cell increases in volume when kept in a solution, the solution must

1. Hypotonic
2. Hypertonic
3. Isotonic
4. None of these

Ans-1

24. The phenomenon by which the shoot bends towards light is

1. Phototropism
2. Photosynthesis
3. Photoperiodism
4. Photorespiration

Ans-1

25. Plants that live on other plants but do not take anything from them are

1. Saprophytes
2. Epiphytes
3. Mesophytes
4. Xerophytes

Ans-2

26. The organisms that feed on dead organic matters are

1. Parasites
2. Epiphytes
3. Saprophytes
4. None of these

Ans-3

27. Plants that eat insects are known as

1. Insectivorous plants
2. Producers
3. Parasites
4. Saprophytes

Ans-1

28. Bacteriophage is a

1. Fungus
2. Virus
3. Bacterium
4. None of these

Ans-2

29. Parallel venation is not seen in

1. Maize
2. Wheat
3. Hibiscus
4. Palm

Ans-3

30. Cortex is the region present in between

1. Epidermis and stele
2. Endodermis and pith
3. Epidermis and pith
4. None of the above

Ans-1

31. Chromosomes start moving towards the pole in Of mitosis

1. Anaphase
2. Metaphase
3. Prophase
4. Telophase

Ans-1

32. Raphides are crystals of

1. Calcium carbonate

2. Calcium oxalate
3. Sodium chloride
4. Sodium carbonate

Ans-2

33. A micron is of millimeter

1. 1/10
2. 1/100
3. 1/1000
4. 1/10,000

Ans-3

34. The plants which flower only once in their lifetime are

1. Polycarpic
2. Monocarpic
3. Biennials
4. None of the above

Ans-2

35. Meristematic tissues are characterized by the

1. Lignified wall
2. Large vacuole
3. Capacity to divide
4. Absence of cell wall

Ans-3

36. The age of a tree is calculated according to

1. The height of the tree
2. The number of leaves
3. The number of annual rings
4. The colour of the trunk

Ans-3

37. The oxygen released during photosynthesis comes from

1. H₂O
2. CO₂
3. Protoplasm

4. None of these

Ans-1

38. Auxanometer is the apparatus used to measure

1. Growth rate in plants
2. Photosynthetic rate
3. Rate of transpiration
4. Rate of translocation

Ans-1

39. Which of the following is not of fungus?

1. Sargassum
2. Puff balls
3. Bread mold
4. Yeast

Ans-1

40. The edible part of cauliflower is

1. Inflorescence
2. Fruit
3. Stem
4. Leaves

Ans-1

41. The flowers which do not open at all are called

1. Cleistogamous
2. homogamous
3. Heterogamous
4. None of the above

Ans-1

42. The opening and closing of stomata are controlled by

1. Guard cells
2. Epidermal cells
3. Mesophyll cells
4. Appendages on the epidermis

Ans-1

43. Which of the following is an underground stem

1. Carrot
2. Raddish
3. Beetroot
4. Potato

Ans-4

44. Binomial nomenclature was introduced by

1. Linnaeus
2. Miller
3. Prantle
4. Robert hooke

Ans-1

45. Tuberous adventitious roots are seen in

1. Potato
2. Dahlia
3. Raddish
4. Carrot

Ans-2

46. Photosynthesis is maximum in

1. Blue light
2. Green light
3. Red light
4. Ultra violet light

Ans-3

47. Superior ovary is found in Flowers

1. Perigynous
2. Epigynous
3. Hypogynous
4. None of the above

Ans-3

48. Spike inflorescence is seen in

1. Amaranthus

2. Hibiscus
3. Jasmine
4. Mango

Ans-1

49. Pollination is

1. Dispersal of pollen by wind
2. Transfer of pollen to the stigma
3. Germination of pollen on the stigma
4. Dehiscence of anther

Ans-2

50. Pod of pea plant is a

1. Fruit
2. seed
3. flower
4. none of the above

Ans-1

51. Angiosperms differ from gymnosperms in having

1. a fruit
2. a big seed
3. a flower
4. well developed leaves

Ans-1

52. Water is translocated through

1. xylem
2. phloem
3. cortex
4. none of these

Ans-1

53. During photosynthesis plants

1. absorb oxygen and release carbon dioxide
2. absorb carbon dioxide and release oxygen
3. absorb nitrogen and release oxygen

4. absorb nitrogen and release carbon dioxide

Ans-2

54. Leguminous plants fix nitrogen with the help of

1. chloroplasts
2. rhizobium
3. fungi
4. none of the above

Ans-2

55. The largest tree in the world is

1. sequoia gigantea
2. giant oak
3. banyan
4. eucalyptus

Ans-1

56. The simplest form of carbohydrate is

1. monosaccharide
2. disaccharide
3. polysaccharide
4. none of the above

Ans-1

57. Opening and closing of guard cells is due to

1. turgor pressure
2. wall pressure
3. imbibition
4. none of the above

Ans-1

58. Parenchyma tissue is characterized by the presence of

1. sclereids
2. thick wall
3. thin wall
4. none of the above

Ans-3

59. Production of new plants without fertilization is

1. vegetative propagation
2. transplantation
3. grafting
4. layering

Ans-1

60. The flower in which the ovary matures first is known as

1. protandrous
2. protogynous
3. dichogynous
4. none of the above

Ans- 2

(CHEMISTRY)

1. In an exothermic reaction, heat is

- 1) evolved
- 2) absorbed
- 3) either evolved or absorbed
- 4) neither evolved nor absorbed

Ans-1

2. Heat of transition is heat evolved or absorbed when a substance is converted from

- 1) solid liquid
- 2) solid to vapour
- 3) liquid to vapour
- 4) one allotropic form to another allotropic form

Ans-4

3. ' Heat of neutralization of a strong acid by a strong base is a constant ' because

- 1) Salt formed does not hydrolyse
- 2) Only H⁺ and OH⁻ ions react in every case
- 3) The strong base and strong acid react completely
- 4) The strong base and strong acid react in aqueous solution

Ans-2

4. Heat of reaction at constant pressure and constant volume is

- 1) Greater in the first case
- 2) Greater in the second case
- 3) Same in the both case
- 4) Depending on the temperature

Ans-5

5. The heat of formation of carbon dioxide is -393.5 KJ. The heat of decomposition of carbon dioxide into the elements is

- 1) 393.5 KJ
- 2) 161.7 KJ
- 3) 196.7 KJ
- 4) 203 KJ

Ans-1

6. Which of these does not influence the rate of reaction?

- 1) Nature of the reactants
- 2) Concentration of the reactants
- 3) Temperature of the reaction
- 4) Molecularity of the reaction

Ans-4

7. The rate constants of forward and backward reactions are 8.5×10^{-5} and 2.38×10^{-4}

The equilibrium constant is

- 1) 0.34
- 2) 0.42
- 3) 2.92
- 4) 0.292

Ans-1

8. $2\text{HI} \rightarrow \text{H}_2 + \text{I}_2$. If an inert gas is added to the system at equilibrium the concentration of the products

- 1) Decrease
- 2) increase
- 3) cannot be said precisely
- 4) is unaltered

Ans-4

9. $2 \text{HI} \rightarrow \text{H}_2 + \text{I}_2$. Here the relation between K_p and K_c is

1) $K_p > K_c$ 2) $K_p = K_c$ 3) $K_p < K_c$ 4) $K_p = 2K_c$

- 1) The removal of chlorine
- 2) Low temperature
- 3) Removal of PCl_5
- 4) high pressure

Ans-1

13. $2 \text{SO}_2 + \text{O}_2 \rightarrow 2 \text{SO}_3$. The forward reaction is favoured by

- 1) High temperature
- 2) Low pressure
- 3) Removal of sulphur dioxide
- 4) High pressure

Ans-4

14. $\text{N}_2 + 3 \text{H}_2 \rightarrow 2 \text{NH}_3 + \text{Heat}$. What is the effect of increase of temperature on the equilibrium of the reaction?

- 1) Equilibrium is shifted to the left
- 2) Equilibrium is shifted to the right
- 3) Equilibrium is unaltered
- 4) Reaction rate does not change

Ans-1

15. A large increase in the rate of a reaction for a rise in temperature is due to

- 1) The increase in the number of collisions
- 2) The increase in the number of activated molecules
- 3) The shortening of the mean free path
- 4) The lowering of the activation energy

Ans-2

16. Catalytic decomposition of hydrogen peroxide is a order reaction.

- 1) Zero
- 2) first
- 3) second
- 4) third

Ans-2

17. The reaction $2 \text{N}_2\text{O}_5 \rightarrow 4 \text{NO}_2 + \text{O}_2$ follows I order kinetics. Hence the molecularity of the reaction is

- 1) Unimolecular
- 2) Pseudo unimolecular
- 3) Biomolecular
- 4) None of these

Ans-3

18. Radioactivity decay follows

- 1) Zero order
- 2) I order
- 3) II order
- 4) III order

Ans-2

19. The hydrolysis of methyl acetate catalysed by acid is an example for

- 1) First order reaction
- 2) Second order reaction
- 3) Bimolecular reaction
- 4) None of these

Ans-1

20. The decay constant of a reaction is $1.1 \times 10^{-9}/\text{sec}$. Then the half life of the reaction is

- 1) 1.2×10^8
- 2) 6.3×10^8
- 3) 3.3×10^8
- 4) 2.1×10^8

Ans-2

21. The catalyst remains unchanged at the end of the reaction regards

- 1) Quality
- 2) Chemical composition
- 3) Quality and chemical composition
- 4) Chemical composition and physical state

Ans-2

22. In the manufacture of nitric acid by Ostwald's process, the catalyst used is

- 1) Finely divided iron
- 2) Platinum – rhodium gauze
- 3) Vanadium – pentoxide
- 4) Molybdenum

Ans-2

23. In the hydrogenation of oil, the catalyst used is

- 1) Platinum
- 2) Finely divided nickel
- 3) Molybdenum
- 4) Finely divided iron

Ans-2

24. A catalyst poison

- 1) Reacts with the reactants
- 2) Reacts with the catalyst
- 3) Destroys active centres
- 4) Forms a film on the catalyst

Ans-3

25. A silver cup is plated with silver by passing 965 coulombs of electricity. The amount of silver deposited is

- 1) 9.89 gm
- 2) 107.87 gm
- 3) 1.0787 gm
- 4) 1.0002 gm

Ans-3

26. Sulphuric acid is a stronger acid than acetic acid because

- 1) It dissociates completely
- 2) It has high molecular weight
- 3) Acetic acid is weakly ionised
- 4) It is highly unstable

Ans-1

27. Acetic acid is a weak electrolyte because

- 1) Its molecular weight is high
- 2) It is a covalent compound
- 3) It does not dissociate much
- 4) It is highly unstable

Ans-3

28. An electrolyte is one

- 1) Which conducts electric current
- 2) Which is capable of ionisation by passing electric current
- 3) Which dissociates into ions by dissolving in a suitable solvent
- 4) Possesses ions even in the solid state

Ans-3

29. In the electrolysis of dil. H_2SO_4 using platinum electrodes

- 1) OH^- is discharged at the cathode
- 2) H^+ is evolved at the anode
- 3) Oxygen is evolved at the anode
- 4) No chemical change occurs

Ans-3

30. Conductivity of a solution is directly proportional to

- 1) Dilution
- 2) Number of ions
- 3) Current density
- 4) Volume of the solution

Ans-2

31. Which one of the following does not conduct electricity?

- 1) Fused NaCl
- 2) Solid NaCl
- 3) Sodium chloride solution
- 4) Copper

Ans-2

32. Solid sodium chloride is a bad conductor of electricity because

- 1) It contains only molecules
- 2) It does possess ions

- 3) The ions present in it are not free to move
- 4) It does not contain free molecules

Ans-3

33. pH is defined as

- 1) $-\log 1/[H^+]$
- 2) $\log 1/[H^+]$
- 3) $\log [H^+]$
- 4) $1/\log[H^+]$

Ans-2

34. A strong electrolyte is one

- 1) Which ionises almost completely in solution
- 2) Which is partially ionised
- 3) Which forms complex ions
- 4) Which is ionised even at high concentration

Ans-1

35. The conductivity of an infinitely diluted solution is

- 1) Equal to the sum of ionic conductances
- 2) Equal to the product of ionic conductances
- 3) Independent of the ionic conductances
- 4) Equal to the difference of ionic conductances

Ans-1

36. A drop of HCl is added to pure water. Its pH

- 1) Decreases
- 2) Increases
- 3) Is unaltered
- 4) Increases steeply

Ans-1

37. A drop of HCl is added to a solution of CH_3COONa and CH_3COOH . Then the pH

- 1) Decrease
- 2) Increases
- 3) Is unaltered
- 4) Decreases gradually

Ans-3

38. In NaOH, $[\text{OH}^-]$ is highest. Even then the product of $[\text{H}^+]$ and $[\text{OH}^-]$ is

- 1) 10^{-1}
- 2) 10^{-7}
- 3) 10
- 4) 10^{-1}

Ans-1

39. The reaction in which water reacts with anion or cation of salt to form an acidic or alkaline solution is called

- 1) Neutralisation
- 2) Hydrolysis
- 3) Electrolysis
- 4) Pyrolysis

Ans-2

40. The standard electrode potential is measured by

- 1) Voltmeter
- 2) Pyrometer
- 3) Galvanometer
- 4) Ammeter

Ans-1

41. The standard electrode potentials of zinc and copper electrodes are -0.76 V and $+0.34\text{ V}$ respectively. Then the e.m.f. of Daniel cell is

- 1) $+0.36\text{ volt}$
- 2) $+1.10\text{ volt}$
- 3) -1.10 volt
- 4) $+0.81\text{ volt}$

Ans-2

42. A metal rod is dipped in a solution of its ions. Its electrode potential is independent of

- 1) Temperature of the solution
- 2) Concentration of the solution
- 3) Area of the metal exposed
- 4) Nature of metal

Ans-3

43. Ammonia is passed over strongly heated cupric oxide

- 1) Copper is formed
- 2) Copper nitride is obtained
- 3) Copper oxide is formed
- 4) Nitric oxide is formed

Ans-1

44. Ammonium sulphate is primarily used as

- 1) Fertiliser
- 2) Antiseptic
- 3) Mordant
- 4) Drug

Ans-1

45. Action of heat on ammonium sulphate and sodium nitrite gives

- 1) NO
- 2) NO₂
- 3) N₂O
- 4) N₂

Ans-4

46. Nitrous acid is a/an

- 1) Oxidising agent
- 2) Reducing agent
- 3) Dehydrating agent
- 4) Drying agent

Ans-2

47. Ammonium carbonate is a smelling salt because

- 1) It has pleasant smell
- 2) It gives the smell of ammonia
- 3) It decomposes
- 4) It is crystalline

Ans-2

48. Nitrogen is absorbed by

- 1) Aluminium carbide
- 2) Calcium carbide
- 3) Ferrous sulphate
- 4) Calcium hydroxide

Ans-2

49. Fixation of nitrogen means

- 1) Manufacture of nitrogen from air
- 2) Liquation of nitrogen
- 3) Nitrogen cycle in nature
- 4) Conversion of atmospheric nitrogen into nitrogen compounds

Ans-4

50. The percentage of nitrogen in urea is

- 1) 50
- 2) 46.6
- 3) 35.2
- 4) 87.3

Ans-2

51. Action of heat on silver nitrate gives

- 1) Silver
- 2) Silver nitrate
- 3) Silver oxide
- 4) Hydrated silver oxide

Ans-1

52. When nitric oxide mixed with excess oxygen is dissolved in water, the product formed is

- 1) Nitric acid
- 2) Nitrogen dioxide
- 3) A mixture of two acids
- 4) Nitrogen pentoxide

Ans-3

53. The anhydride of nitric acid is

- 1) NO
- 2) N₂O

- 3) N_2O_3
- 4) N_2O_5

Ans-4

54. Aqua regia is a mixture of

- 1) con. hydrochloric acid and con. sulphuric acid
- 2) con. sulphuric acid and con. nitric acid
- 3) con. hydrochloric acid and con. nitric acid
- 4) sulphuric acid and acetic acid

Ans-3

55. Dil. HNO_3 and dil. HCl differ in the action on metals because

- 1) Nitrogen is less active than chlorine
- 2) HNO_3 is a reducing agent
- 3) HNO_3 is an oxidising agent
- 4) HCl is a reducing agent

Ans-3

56. The plants absorb atmospheric nitrogen

- 1) By atmospheric electricity
- 2) Directly
- 3) From soil
- 4) By bacteria present in root nodules

Ans-4

57. Phosphorus occurs as

- 1) Phosphide
- 2) Phosphate
- 3) Oxides
- 4) Element (in free state)

Ans-2

58. Phosphine is

- 1) Acidic
- 2) Basic
- 3) Neutral
- 4) Amphoteric

Ans-3

59. P_2O_5 is used as

- 1) Oxidising agent
- 2) Dehydrating agent
- 3) Bleaching agent
- 4) Reducing agent

Ans-2

60. PCl_3 is used in

- 1) Replacing OH group by Cl atom
- 2) Bleaching textiles
- 3) Drying
- 4) Replacing H of OH group by Cl atom

Ans-1

(PHYSICS)

1. The velocity of light in a medium is 2×10^{10} cms/sec. The refractive index of the medium is

- 1) 1.4
- 2) 2.3
- 3) 1
- 4) 1.5

Ans-4

2. If C_g , C_w , C_v are velocities of light in glass, water and vacuum, then the correct relation is

- 1) $C_w = C_g = C_v$
- 2) $C_g < C_w$
- 3) $C_v > C_g$, $C_g > C_w$
- 4) $C_g = C_w$, $C_w > C_v$

Ans-2

3. If C_1 and C_2 are the velocities of light in two media and the respective angles of incidence and refraction are θ_1 and θ_2 , then the correct relation is

- 1) $C_1 \operatorname{cosec} \theta_1 = C_2 \operatorname{cosec} \theta_2$
- 2) $C_1 \cot \theta_1 = C_2 \cot \theta_2$
- 3) $C_1 \tan \theta_1 = C_2 \tan \theta_2$
- 4) $C_1 \sin \theta_1 = C_2 \sin \theta_2$

Ans-1

4. Total internal reflection takes place when light passes from

- 1) Water to glass
- 2) glass to diamond
- 3) air to water
- 4) glass to air

Ans-4

5. The brilliance of diamond is

- 1) entirely due to refractive index
- 2) entirely due to total internal reflection
- 3) partly due to total internal reflection
- 4) none of the above

Ans-3

6. The focal length of an equiconvex lens ($\mu = 1.5$) is 30 cms. The radii of curvature of the faces are respectively

- 1) 15, 30
- 2) 14, 28
- 3) 30, 30
- 4) 15, 15

Ans-3

7. A travelling microscope is focussed on an ink dot. When a glass slab ($\mu = 1.5$) of thickness 9 cm. is introduced on the dot, the travelling microscope has to be moved by

- 1) 3 cms. Upwards
- 2) 5 cms. Upwards
- 3) 3 cms. downwards
- 4) 5 cms. downwards

Ans-1

8. A lens of power +2D and a lens of power -1D are kept in contact. The combination behaves as

- 1) a lens of power +3D
- 2) a lens of power -3D
- 3) a lens of power +1D
- 4) a lens of power -1D

Ans-3

9. Two lenses of power +2D and -5D are kept in contact. The focal length of the combination is

- 1) $-1/3\text{m}$
- 2) $1/3\text{m}$
- 3) 3m
- 4) -3m

Ans-1

10. A swimmer is inside a tank. Supposing that the surface is calm, the swimmer, when looking up sees the outside with an angular separation of

- 1) 40degree
- 2) 90degree
- 3) 98degree
- 4) 101degree

Ans-3

11. Mirages are observed on some days when

- 1) density of air increases with height
- 2) density of air decreases with height
- 3) earth acts like a mirror
- 4) air is dense uniformly

Ans-1

12. The angles of a total reflecting prism are

- 1) 45degree, 50degree, 85degree
- 2) 45degree, 45degree, 90degree
- 3) 90degree, 90degree, 90degree
- 4) 45degree, 45degree, 45degree

Ans-2

13. The angles of incidence and emergence of an equilateral prism are 50degree and 40degree, the angle of deviation is

- 1) 40degree
- 2) 50degree
- 3) 60degree
- 4) 30degree

Ans-4

14. when the deviation of yellow line of a spectrum is minimum, then the refracted ray is (in a prism)

- 1) Parallel to base
- 2) perpendicular to base
- 3) both
- 4) none of these

Ans-1

15. An object is placed at a distance 18 cms. from a convex lens. The image is formed at a distance of 9 cms. The focal length of the lens is

- 1) 6 cms
- 2) 9 cms
- 3) 10 cms
- 4) 18 cms

Ans-1

16. The focal length of a lens is 5 cms. If the least distance of distinct vision is 25 cms, then magnification is

- 1) 20
- 2) 10
- 3) 6
- 4) 1

Ans-3

17. The focal length of a convex lens of radii of curvature 20 cms and 30 cms is 24. Its refractive index is

- 1) 1.0
- 2) 1.3
- 3) 1.5
- 4) 2.4

Ans-3

18. Two lenses of powers +2D and -6D are kept in combination. Focal length of the combination is

- 1) -0.25 m
- 2) 0.25 m

- 3) 2.5 m
- 4) -0.025 m

Ans-1

19. An air bubble in water behaves as

- 1) a convex lens
- 2) a concave lens
- 3) a convex mirror
- 4) a concave mirror

Ans-2

20. A Galilean telescope consists of

- 1) a concave and convex lens
- 2) 2 convex lenses
- 3) 2 concave lenses
- 4) a plano-convex and a biconvex lens

Ans-1

21. The magnifying power of an astronomical telescope is 15. If the focal length of objective is 90 cm, then focal length of eye piece is

- 1) 5/30 cm
- 2) 1 cm
- 3) 6 cm
- 4) 1350 cms

Ans-3

22. In a compound microscope, the magnification is maximum when focal length of objective is

- 1) large
- 2) small
- 3) equal to that of eye piece
- 4) none of these

Ans-2

23. A spectrometer consists of

- 1) prism table
- 2) collimator

- 3) telescope
- 4) all the above

Ans-4

24. The principle used in the Direct Vision Spectroscope is

- 1) dispersion without deviation
- 2) dispersion with deviation
- 3) deviation without dispersion
- 4) deviation with dispersion

Ans-1

25. Optical fibers are used in

- 1) polarimeter
- 2) photometer
- 3) voltmeter
- 4) gastroscope

Ans-4

26. The rays of light travelling from a distant object are incapable of converging at a common point after refraction through a thin lens; this fact is known as

- 1) spherical aberration
- 2) chromatic aberration
- 3) invisibility
- 4) astigmatism

Ans-1

27. Band spectrum is emitted by

- 1) atoms
- 2) ions
- 3) gases
- 4) molecules

Ans-4

28. A metal which emits colours when heated to certain temperature absorbs the same colours when cooled. This was said by

- 1) Fraunhofer
- 2) Taylor

- 3) C.V. Raman
- 4) Kirchhoff

Ans-4

29. Fraunhofer lines indicate

- 1) presence of certain elements in interior of sun
- 2) presence of certain elements in exterior of sun
- 3) absence of certain elements in interior of sun
- 4) absence of certain elements in exterior of sun

Ans-2

30. The explanation for presence of Fraunhofer lines was given by

- 1) Kirchhoff
- 2) Fraunhofer
- 3) Leibig
- 4) Layman

Ans-1

31. Helium was discovered in sun's atmosphere by analysing

- 1) Mayerhoff bands
- 2) Fraunhofer lines
- 3) spectrum
- 4) spectrometer

Ans-2

32. The wavelength of infrared rays is

- 1) greater than that of visible light
- 2) less than that of visible light
- 3) greater or lesser, depending on the source
- 4) none of these

Ans-1

33. Light is not transmitted through two nicols if

- 1) their shorter diagonals are parallel
- 2) their shorter diagonals are perpendicular
- 3) their longer diagonals are parallel
- 4) their longer diagonals are perpendicular

Ans-3

39. Waves that cannot be polarized are

- 1) longitudinal
- 2) transverse
- 3) electromagnetic
- 4) light

Ans-1

40. The planes of vibration and polarization are

- 1) 1)orthogonal
- 2) parallel
- 3) non-existent
- 4) orthogonal and parallel

Ans-1

41. The correct expression relating polarizing angle and refractive index is

- 1) $\mu \sin i_p = 1$
- 2) $\mu \cot i_p = 1$
- 3) $\mu \tan i_p = 1$
- 4) $\mu \operatorname{cosec} i_p = 1$

Ans-2

42. The specific rotation of a liquid of length 10 cm, concentration 2 gm/cc is 400 .The angle of rotation is

- 1) 10degree
- 2) 70degree
- 3) 80degree
- 4) 90degree

Ans-3

43. In calcite, double refraction doesn't take place

- 1) perpendicular to optic axis
- 2) along optic axis
- 3) both perpendicular to and along the optic axis
- 4) transversely

Ans-2

44. An example for a diamagnetic substance is

- 1) copper
- 2) iron
- 3) nickel
- 4) aluminium

Ans-1

45. The charges on a body can be detected with

- 1) electroscope
- 2) electrometer
- 3) voltmeter
- 4) ammeter

Ans-1

46. When a glass plate is introduced in between two charged bodies, the force between them

- 1) increases
- 2) decreases
- 3) remains the same
- 4) becomes zero

Ans-2

47. The electric potential at a point at a distance 'r' from a charge 'q' is E. When the charge q is replaced by a charge 4q the potential at the same point will be

- 1) same
- 1) $2\frac{1}{2}E$
- 2) 2E
- 3) 4E

Ans-4

48. A force repulsion is felt by a charge in front of a charged plate, keeping the distance and the charge constant. The interspace is filled with wax; then

- 1) the force of repulsion changes to force of attraction
- 2) the force of repulsion increases
- 3) the force of repulsion gets lowered
- 4) the force of attraction increases or decreases

Ans-3

49. Four charges of magnitude 2 esu, 8 esu, 5 esu and -10 esu are placed at corners of a square ABCD of side 2 cm. The potential at the centre is

- 1) 5/ units
- 2) 10 units
- 3) 4.5/ units
- 4) -10units

Ans-1

50. If the distance between the plates of a parallel plate condenser is increased, then capacity

- 1) increases
- 2) decreases
- 3) remains same
- 4) none

Ans-2

51. When a dielectric medium is introduced between two charged plates then capacity

- 1) decreases
- 2) increases
- 3) remains same
- 4) none

Ans-2

52. Two condensers of capacities $2 \mu\text{F}$ and $3 \mu\text{F}$ are connected in series. Two more condensers of capacity $4/5 \text{ F}$ is connected in parallel with the combination; the effective capacity is

- 1) $29/20 \mu\text{F}$
- 2) $20/29 \mu\text{F}$
- 3) $2 \mu\text{F}$
- 4) $1 \mu\text{F}$

Ans-3

53. Two condensers of capacities 5 and 10 F are connected in series. Two more condensers of capacities 2 and 4 F are separately connected in series. Then, if the two combinations are connected in parallel the effective capacity is

- 1) $13/3 \text{ F}$
- 2) $14/3 \text{ F}$

- 3) $\frac{3}{14} F$
- 4) $\frac{3}{13} F$

Ans-2

54. Charges present on clouds are due to

- 1) motion of water drops
- 2) earth's magnetic field
- 3) lightning
- 4) movement of the cloud

Ans-1

55. The p.d. across resistance of 1Ω is 1 V, then the current is

- 1) 1 amp
- 2) 10 emu
- 3) 10 amp
- 4) 1 emu

Ans-1

56. The resistance of a conductor is

- 1) Directly proportional to area of across-section
- 2) Inversely proportional to length of conductor
- 3) Directly proportional to length of conductor
- 4) Inversely proportional to temperature of conductor

Ans-3

57. The emf of a cell is 1.5 volts and when it is connected to an external resistance of value 2 ohms the current in the circuit is 0.2 amp. The internal resistance of the cell would be

- 1) 0.25 ohm
- 2) 5.5 ohm
- 3) 1 ohm
- 4) 2 ohm

Ans-2

58. If E is the emf of a cell of internal resistance r and external resistance R, then

p.d. across R is given as

- 1) $V = E/(1 + r)$

- 2) $V = ER/(R + r)$
- 3) $V = E/(1 + r/R)$
- 4) $V = E/(1 + R/r)$

Ans-2

59. If 'n' batches of m cells are connected in parallel with a cell of emf E, then current through external resistance (R), internal resistance (r) is given by

- 1) $I = mnE/(mr + nR)$
- 2) $I = mnE/(mR + nr)$
- 3) $I = (mE/n)/(mR + nr)$
- 4) $I = (nE/m)/(mr + nR)$

Ans-1

60. The algebraic sum of products of current and resistance in a closed electrical path

is equal to

- 1) total emf in that path
- 2) total resistance in that path
- 3) total current in that path
- 4) None of these

Ans-1

