UNIVERSITY OF LUCKNOW

D.Pharm Entrance Examination

Biology Group — Model Test Paper Set 10

Total Questions: 100 | Section A: Chemistry & Physics (50) + Section B: Biology (50)

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SECTION A — Chemistry & Physics [50]

Chemistry

1. What is the mass percentage of S in H SO ?

(a) 32.65% (b) 65.30%

(c) 28.00% (d) 48.32%

Answer: (a) 32.65%

2. Zeeman effect corresponds to the splitting of spectral lines in the presence :

(a) Electric field (b) Both electric and magnetic fields

(c) Neither electric field nor magnetic field (d) Magnetic field

Answer: (d) Magnetic field

3. The element with atomic number 37 belongs to which block in the modern periodic table?

(a) f-block (b) d-block

(c) p-block (d) s-block

Answer: (d) s-block

4. Which of the following metal hydrides has the crystal structure of rutile?

(a) NaH (b) MgH

(c) LiH (d) BaH 2 77 YCT

Answer: (b) MgH

5. Which of the following methods can't be used for the preparation of hydrogen gas?

(a) Reaction of ethanolamine solution with CO (b) Reaction of saltlike hydrides with water

(c) Steam reformer process (d) Electrolysis of the aqueous solution of NaOH or KOH

Answer: (a) Reaction of ethanolamine solution with CO

6. The common zeolite used for softening of hard water is Natrolite. Its molecular formula is: Yeejer peue :

(a) Na OAl O .2H O 2 2 3 (b) Na OAl O .3SiO .2H O 2 2 3 2

(c) CaOAl O .SiO .2H O 2 3 2 (d) MgOAl O .3SiO .2H O 2 3 2

Answer: (b) Na OAl O .3SiO .2H O 2 2 3 2

7. What is the temporary hardness of water if water contains 7.3 :

(a) 35 mg (b) 25 mg

(c) 15 mg (d) 20 mg

Answer: (c) 15 mg

8. Spodumene is the mineral of which element?

(a) Caesium (b) Potassium

(c) Sodium (d) Lithium

Answer: (d) Lithium

9. Which of the group 1 metal hydrides is stable up to 900 :

(a) Sodium hydride (b) Potassium hydride

(c) Caesium hydride (d) Lithium hydride

Answer: (d) Lithium hydride

10. The ingredients that makes up the baking powder are: yesefkeb :

(a) NaHCO , Starch, NaAl(SO) and 3 4 2 Ca(H PO) (b) NaHCO and Starch

(c) Only NaHCO (d) NaHCO , Starch and NaAl(SO)

Answer: (a) NaHCO , Starch, NaAl(SO) and 3 4 2 Ca(H PO)

11. Metallic crystal structure of calcium :

(a) Body centered cubic (b) Simple cubic

(c) Face centered cubic (d) Hexagonal close packing

Answer: (c) Face centered cubic

12. Major cation in the intracellular fluid in animals is: heMegDeeW ceW Deblejeke :

(a) Calcium (b) Sodium

(c) Potassium (d) Magnesium

Answer: (c) Potassium

13. Calamine is the ore of: :

(a) Al (b) Fe

(c) Ca (d) Zn

Answer: (d) Zn

14. Which of the following alcohols cannot be oxidised to a carbonyl compound?

(a) Ter-butyl alcohol (b) Sec-butyl alcohol

(c) 1-pentanol (d) n-butyl alcohol

Answer: (a) Ter-butyl alcohol

15. By using SOCl , alcohols are converted into: 2 SOCl :

(a) Alkyl halides (b) Carboxylic acids

(c) Alkenes (d) Alkanes

Answer: (a) Alkyl halides

16. Consider the below reaction. CHCH(OH)CH :

(a) Oxidation (b) Disproportionation

(c) Reduction (d) Redox reaction

Answer: (a) Oxidation

17. The compound Nonactin binds to which metal ion?

(a) Mg+2 (b) K+

(c) Na+ (d) Ca+2

Answer: (b) K+

18. Stereochemistry of SN reaction involves: 2 SN DeefYeef :

(a) Racimisation with inversion (b) Retention

(c) Inversion (d) Racimisation with retention

Answer: (c) Inversion

19. For an E reaction, which of the following is correct?

(a) R-Cl > R-Br > R-I (b) R-Cl<R-I<R-Br

(c) R-Cl < R-Br < R-I (d) R-Br<R-I<R-Cl

Answer: (c) R-Cl < R-Br < R-I

20. The transition state of SN reaction has: 2 SN DeefYeef :

(a) Carbon tetrahedral structure (b) Normal tetrahedral structure

(c) Square planar structure (d) Linear structure

Answer: (a) Carbon tetrahedral structure

21. SN and SN reactions follow: 2 1 SN Deewj SN DeefYeef :

(a) Both follow second order (b) First and second order

(c) Second and first order (d) Both follow first order

Answer: (c) Second and first order

22. Which of the following statements is correct?

(a) Bromination is more selective than Chlorination (b) Both are equally selective

(c) Bromination is less selective (d) Chlorination is more selective than bromination

Answer: (a) Bromination is more selective than Chlorination

23. Which of the following is an antibiotic?

(a) Dolo (b) Amoxycillin

(c) Rantidin (d) Furosemide

Answer: (b) Amoxycillin

24. Morphine consists :

(a) Tertiary amine (b) Quaternary carbon

(c) Tertiary carbon (d) Tertiary amine and quaternary carbon

Answer: (d) Tertiary amine and quaternary carbon

25. Which of following compounds shows octahedral geometry?

(a) XeF (b) XeO

(c) XeF 2 (d) SF 3

Answer: (d) SF 3

Physics

26. Newton's rings are fringes of:

(a) equal thickness (b) equal radii

(c) both equal inclination and equal (d) equal inclination

Answer: (a) equal thickness

27. Which of the following phenomenon is not concerned with the production of polarised light?

(a) Double refraction (b) Scattering

(c) Dispersion (d) Brewster's law

Answer: (c) Dispersion

28. Consider the following: A. Presence of audience in a hall decreases reverberation time. B. Open windows increase reverberation time ?

(a) Both A, B are false (b) Both A, B are true

(c) A is false, B is true (d) A is true, B is false

Answer: (d) A is true, B is false

29. A sound wave of unknown frequency gives 10 beats with a wave of frequency 300 Hz and 15 beats with a wave of frequency 325 Hz. The frequency of unknown wave is ?

(a) None of the above (b) 340 Hz

(c) 310 Hz (d) 290 Hz

Answer: (c) 310 Hz

30. A tuning fork of frequency 260 Hz is vibrated with a sonometer wire and 5 beats are heard. If the tension in the wire is slightly increase, the beat frequency also decreases. The original frequency of the sonometer is ?

(a) 265 Hz (b) 250 Hz

(c) 260 Hz (d) 255 Hz

Answer: (d) 255 Hz

31. The concept of internal energy was first introduced by ?

(a) Second law of thermodynamics (b) Stefan's law

(c) Wien's law PV (d) First law of thermodynamics

Answer: (d) First law of thermodynamics

32. Newton's law of cooling is a special case of ?

(a) Kirchhoff's law (b) Wien's displacement law

(c) Planck's law (d) Stefan's law

Answer: (d) Stefan's law

33. An iron plate 2 cm thick has a cross-section of cm2. 5000 Its one side is at 110°C and the other side is at 100°C. If thermal conductivity of iron is 0.115 cal/s-cm-°C, the rate of heat flow through the plate is ?

(a) 4750 cal/s (b) 5750 cal/s

(c) 2375 cal/s (d) 2875 cal/s

Answer: (d) 2875 cal/s

34. Transport phenomena is gases represent the transport of certain quantities. Which of the following is not correctly matched? Transport Phenomenon Quantity ?

(a) Conduction Momentum (b) Diffusion Energy

(c) None of the above (d) Viscosity Mass

Answer: (c) None of the above

35. Which of the following is the unit of strain?

(a) Newton (b) Watt

(c) No unit (d) Joule

Answer: (c) No unit

36. If the diameter of a capillary tube is increased by two times, then the height of liquid rise in it will be :

(a) two times (b) one-fourth

(c) half (d) remains same

Answer: (c) half

37. The surface tension of a liquid ?

(a) Decreases with surface area (b) Increases with surface area

(c) Increases with temperature (d) Decreases with temperature

Answer: (d) Decreases with temperature

38. The negative electrode in lead acid battery is ?

(a) Lead (b) Silver

(c) Carbon (d) Iron

Answer: (a) Lead

39. A particle moves in a circular path with uniform speed. The direction of acceleration of the particle will be :

(a) Normal to the plane of the path (b) Along the radius

(c) Acceleration is zero (d) Along the tangent to the path

Answer: (b) Along the radius

40. Which of the following is conservative force?

(a) Gravitational Force (b) Frictional force

(c) Viscous force (d) None of the above

Answer: (a) Gravitational Force

41. In above velocity-time graph of a particle, the distance covered in first 4 seconds is ?

(a) 20m (b) 12m

(c) 16m (d) Zero

Answer: (c) 16m

42. Which of the following is not necessary for performing LASER action ?

(a) Spontaneous emission (b) Meta-energy level

(c) Population inversion (d) Stimulated emission

Answer: (a) Spontaneous emission

43. A plane polarized light is passed through a quarter wave plate. The circularly polarized light is obtained, when the angle between plane polarized light and principal axis of the plate is ?

(a) 900 (b) 00

(c) 1800 (d) 450

Answer: (d) 450

44. A diffraction grating has 4000 lines and is fully exposed at normal incidence. The resolving power of the grating in the third order of the ° spectrum at the 5000Awavelength is ?

(a) 18000 (b) 12000

(c) 7500 (d) 15000

Answer: (d) 15000

45. The mean separation of two points on moon that can be resolved by a 500 cm telescope aperture is (distance of the moon is 4×105 km, eye is most sensitive to wavelength 5500Å) ?

(a) 50.6 m (b) 53.6 m

(c) 40 m (d) 43 m

Answer: (b) 53.6 m

46. Fraunhofer spectrum is ?

(a) Line emission spectrum (b) Band emission spectrum

(c) Band absorption spectrum (d) Line absorption spectrum

Answer: (d) Line absorption spectrum

47. Which of the following are coherent sources?

(a) A 60 Watt and a 100 Watt bulbs (b) Two virtual sources obtained by biprism

(c) Two bulbs of 60W each (d) Two halves of a 60 Watt bulbs

Answer: (b) Two virtual sources obtained by biprism

48. Ratio of focal lengths of two lenses of Huygens eyepiece is ?

(a) None of the above (b) 2 :

(c) 3 : (d) 1 :

Answer: (c) 3 :

49. The critical angle is maximum when light travels from ?

(a) glass to water (b) glass to air

(c) water to air (d) air to water

Answer: (a) glass to water

50. With the decrease in the prism angle, the angular dispersion between red and violet rays ?

(a) Depends on the incidence angle (b) Does not change

(c) Decreases (d) Increases

Answer: (a) Depends on the incidence angle

SECTION B — Biology [50]

Zoology

51. Fibroblast, macrophages and mast cells are seen in ?

(a) Areolar tissue (b) Loose connective tissue

(c) Evolutionary trend (d) Integument with muscles

Answer: (b) Loose connective tissue

52. Type of muscle tissue is found in the wall of internal organs ?

(a) Cardiac muscles (b) Extracellular matrix

(c) Smooth muscles (d) Glandular epithelium

Answer: (c) Smooth muscles

53. Kind of tissue is found in the tip of nose, outer ear joints, between adjacent bones of the vertebral column, limbs and hands in adults ?

(a) Morphology Earthworm (b) Squamous, ciliated

(c) Squamous epthelium (d) Specialized connective tissue

Answer: (d) Specialized connective tissue

54. Mucus, saliva, earwax, oil, milk and digestive enzymes are secreted by ?

(a) Morphology Earthworm (b) Integument with muscles

(c) Lining of oesophagus (d) Exocrine glands

Answer: (d) Exocrine glands

55. Tendons attach skeletal muscles to is ?

(a) Chondrocytes (b) Ca2+

(c) Osteoblasts (d) Bones

Answer: (d) Bones

56. The involved in the rapid transfer of ions, small molecules and some big molecules is ?

(a) Integument with muscles (b) Nervous tissue

(c) Gap junctions (d) Bronchioles

Answer: (c) Gap junctions

57. Meant by a tissue is ?

(a) Buccal cavity, oesophagus, cornea of eye (b) Group of cells of similar origin 3

(c) Study of morphology of internal organs (d) Squamous, ciliated

Answer: (b) Group of cells of similar origin 3

58. The structure of the cell varies according to which of the following is ?

(a) Areolar tissue (b) Ciliated epithelium

(c) Multicellular (d) Function

Answer: (d) Function

59. Type of junction which helps to stop substance from leaking across a tissue ?

(a) Unicellular (b) Dendrite

(c) Ligament (d) Tight junction

Answer: (d) Tight junction

60. Presence of intercalated disc is the feature of ?

(a) Dendrite (b) Cardiac muscle

(c) Function (d) Evolutionary trend

Answer: (b) Cardiac muscle

61. The functions is not performed by epithelial tissue ?

(a) Conduction (b) Gap junctions

(c) Peristomium (d) Cardiac muscles

Answer: (a) Conduction

62. Single thin layer of flattened calls with boundaries is observed in all of the following except ?

(a) Exocrine glands (b) Lining of oesophagus

(c) Areolar tissue (d) Gap junctions

Answer: (b) Lining of oesophagus

63. Ciliated epithelia in human can be observed in is ?

(a) Nephridia (b) Bronchioles

(c) Energy reservoir (d) Peristomium

Answer: (b) Bronchioles

64. Cuboidal epithelin is observed in ?

(a) Tendon (b) Cuboidal

(c) Function (d) PCT

Answer: (d) PCT

65. If the main function is diffusion and movement of mucus, then the epithelia will be respectively ?

(a) Tight junction (b) Bronchioles

(c) Squamous, ciliated (d) Glandular epithelium

Answer: (c) Squamous, ciliated

66. Endocrine glands secrete is ?

(a) Hormones (b) Bronchioles

(c) Nephridia (d) Muscles

Answer: (a) Hormones

67. Microvilli is present in the epithelium of ?

(a) First, last and clitellar segments (b) Proximal convoluted tubule of nephron

(c) Inner wall of blood vessels (d) Circular, longitudinal muscles and setae

Answer: (b) Proximal convoluted tubule of nephron

68. The classification of glands is based on ?

(a) Mode of pouring of secretions (b) Proximal convoluted tubule of nephron

(c) Cell body and Dendrites (d) Smooth and visceral muscles only

Answer: (a) Mode of pouring of secretions

69. When a neuron is stinulated, the electrical signal travels along the ?

(a) Extracellular matrix (b) Exocrine glands

(c) Ciliated epithelium (d) Smooth muscles

Answer: (a) Extracellular matrix

70. That epithelium of the epithelium covers the inner linings of trachea, large bronchi and helps to remove mucus is ?

(a) Smooth muscles (b) Ciliated epithelium
(c) Pheretima, Lumbricus (d) Fibroblasts
Answer: (b) Ciliated epithelium

71. Between the adjacent bones of the vertebral column, is present ?
(a) Cartilage (b) Anal styles
(c) Areolar tissue (d) Muscles
Answer: (a) Cartilage

72. Intercalated discs are the communication junctions between the cells of ?
(a) Osteoblasts (b) Nervous tissue
(c) Cardiac muscles (d) For Crushing food
Answer: (c) Cardiac muscles

73. Structures distinguish a nerve cell from other types of cell is ?
(a) Elastin, Collagen, Reticulin protein (b) Cell body and Dendrites
(c) White fibrous cartilage (d) Presence of caudal styles
Answer: (b) Cell body and Dendrites

74. The only type of cell seen in a tendon is ?
(a) Osteoblasts (b) Fibroblasts
(c) Glandular epithelium (d) Gap junctions
Answer: (b) Fibroblasts

75. Yellow, white and Reticular fibres made up of protein ?
(a) Specialized connective tissue (b) Elastin, Collagen, Reticulin protein
(c) Biting and chewing type (d) Male reproductive system
Answer: (b) Elastin, Collagen, Reticulin protein

Botany

76. The plant parts in garlic and onion are edible ?
(a) Zea mays, Sugarcane (b) Vexillary The Flower
(c) Region of elongation (d) Fleshy scale leaves
Answer: (d) Fleshy scale leaves

77. This plant, part is modified into pitcher in pitcher plants ?
(a) Leaf (b) Alstonia
(c) Hypogynous (d) Epigynous
Answer: (a) Leaf

78. A monocot can be distinguished from a dicot by is ?
(a) Perigynous (b) Hypogynous
(c) Axillary bud (d) Venation
Answer: (d) Venation

79. Whorled phyllotaxy is present in ?
(a) Aestivation (b) Distal
(c) Mustard (d) Alstonia
Answer: (d) Alstonia

80. Arrangement of leaves on the stem or branch is called ?
(a) Gulmohar (b) Phyllotaxy
(c) Primary root (d) Light

Answer: (b) Phyllotaxy

81. Leaves become modified into spines example of ?

(a) Cactus (b) China rose

(c) Mustard (d) Thorns

Answer: (a) Cactus

82. The main purpose of phyllotaxy for the leaves is to provide sufficient ?

(a) Brassica (b) Light

(c) Pisum (d) China rose

Answer: (b) Light

83. An example of fleshy leaves ?

(a) Aestivation (b) Garlic

(c) Parietal (d) Stilt roots

Answer: (b) Garlic

84. Arrangement of veins and the veinlets in the lamina of leaf is known as ?

(a) Flower (b) Venation

(c) Bilobed (d) Alstonia

Answer: (b) Venation

85. _____ plant has superior ovary ?

(a) China rose (b) Region of maturation

(c) Garlic (d) Hypogynous

Answer: (a) China rose

86. Free-central placentation is found in ?

(a) Dianthus (b) Adventitious root

(c) China rose (d) Sweet potato

Answer: (a) Dianthus

87. The ovary is half inferior in ?

(a) Bean, Pea (b) Drupe

(c) Opuntia (d) Plum

Answer: (d) Plum

88. Many pulses of daily use belong to the family ?

(a) Distal (b) Inferior ovary

(c) Stem (d) Fabaceae

Answer: (d) Fabaceae

89. In an inflorescence where flowers are borne laterally in an acropetal succession, the position of the youngest floral bud shall be ?

(a) China rose (b) Flower

(c) Phyllotaxy (d) Distal

Answer: (d) Distal

90. A modified shoot wherein the shoot apical meristem changes to floral meristem is known as ?

(a) Flower (b) Fruit

(c) Bean, Pea (d) Light

Answer: (a) Flower

91. In the gynoecium is present in the topmost position of the thalamus, then the flower is referred to as ?

(a) Hypogynous (b) Mesocarp
(c) Fruit (d) Axillary bud
Answer: (a) Hypogynous

92. Ovary is said to be half inferior in ..... conditions ?
(a) Chilli (b) Fruit
(c) Perigynous (d) Venation
Answer: (c) Perigynous

93. In ..... flowers, margin of thalamus grows upward enclosing the ovary completely and getting fused with it is ?
(a) Epigynous (b) Hypogynous
(c) Flower (d) Wheat plant
Answer: (a) Epigynous

94. Monoadelphous condition of stamens, i.e., stamens united into one bunch or one bundle is a characteristic of ?
(a) Hypogynous (b) China rose
(c) Chilli (d) Eichhornia, Pistia
Answer: (b) China rose

95. Ovary is one-chambered but it becomes two- chambered due to the formation of false septum in ?
(a) Brassica (b) Parthenocarpy
(c) Pea, Cacti (d) Leaves
Answer: (a) Brassica

96. In racemose type of inflorescence, the main axis ?
(a) Cucumber, Pumpkins, Grapevines (b) China rose
(c) Continues to grow (d) Radicle, plumule
Answer: (c) Continues to grow

97. Inflorescence is ?
(a) Arranged on the flowering axis (b) Calyx and Corolla 3 The Fruit
(c) Epicarp, mesocarp, endocarp The Seed (d) Calyx, corolla, androecium and gynoecium
Answer: (a) Arranged on the flowering axis

98. In cymose, flowers are arranged in ?
(a) Fleshy scale leaves (b) Basipetal order Aestivation
(c) Radicle, plumule (d) Cucurbita, Opuntia The Leaf
Answer: (b) Basipetal order Aestivation

99. Arrangement of sepals or petals with respect to each other is called ?
(a) Inferior ovary (b) Aestivation
(c) China rose (d) Bilobed
Answer: (b) Aestivation

100. Type of aestivation shown by Pisum is ?
(a) Opposite, Calotropis 2 (b) Basipetal order Aestivation
(c) Vexillary The Flower (d) Citrus, Bougainvillea
Answer: (c) Vexillary The Flower