IM.Sc-Optometry & Vision Science
Entrance examination- 2010

Hall Ticket Number

Time : 2 hours Total marks: 75

Please read the following instructions carefully before answering.

Instructions

1. This booklet has 9(Nine) pages. Please check thoroughly for all the pages.

2. Enter the Hall ticket number on the first page of this booklet as well as on the OMR sheet.

3. There is negative marking. For each wrong answer 0.33 marks will be deducted.

4. There are two PARTS in the question paper – PART A (Question nos. 1-25) and PART B (Question nos. 26-75). In case of a tie, marks obtained in PART A will be considered for resolving the tie.

5. Calculators are not permitted

PART A

1. Night blindness is also known as
   A) Nyctalopia  B) Hemaralopia  C) Presbyopia  D) Myopia

2. Amongst the following, which one is not true of "Dengue fever"?
   A) Transmitted by mosquito  B) Acute illness with fever
   C) Increase in platelet count  D) Hemorrhagic episodes

3. Choose the correct pair:
   A) Carbon monoxide poisoning : Hemoglobin
   B) Growth hormone deficit : Gigantism
   C) Blood clotting : Vitamin E
   D) Greenhouse gas : Oxygen
4. The condition in which the human lens becomes opaque is:
   A) Glaucoma  B) Diabetic retinopathy  C) Cataract  D) Hyperopia

5. Which one of the following is a viral disease?
   A) Cholera  B) Rabies  C) Malaria  D) Leptospirosis

6. Keratitis is an inflammatory condition of
   A) Liver  B) Lung  C) Kidney  D) Eye

7. Essential amino acid for humans:
   A) Lysine  B) Alanine  C) Glycine  D) Aspartic acid

8. Pernicious anemia is caused by the deficiency of
   A) Intrinsic factor for Vitamin B12  B) Folic acid
   C) Pantothenic acid  D) Pyridoxine

9. The Plasma membrane of mammalian cells contains
   A) Cholesterol  B) Chitin  C) Cellulose  D) Glycogen

10. Dryness of the eye due to loss of tears production is called
    A) Conjunctivitis  B) Xerophthalmia  C) Uveitis  D) Retinitis

11. Which one of the following is not true of a cofactor of an enzyme
    A) It is the protein part of the enzyme  B) It is a metal ion
    C) Aids the catalytic activity of the enzyme  D) It is a coenzyme

12. Hepatitis B virus:
    A) Is an RNA virus  B) Transmitted by aerosolic infection
    C) Is a DNA virus  D) Does not induce carrier state

13. The hormones responsible for ovulation are
    A) Progesterone  B) Estradiol  C) Testosterone
    D) Follicle stimulating hormone and leutinizing hormone
14. The cranial nerve which supplies the eye is
   A) Optic  B) Vagus  C) Ocular  D) Olfactory

15. The cell which plays an important role in cell mediated immunity is:
   A) T Lymphocyte  B) Neutrophil  C) Platelet  D) Eosinophil

16. Thalassemia is caused due to
   A) Genetic defect in hemoglobin production
   B) Non availability of heme
   C) Degradation of hemoglobin
   D) Clotting factor deficiency

17. Hormone that regulates serum calcium level is:
   A) Parathyroid hormone  B) Oxytocin  C) Glucagon  D) Vasopressin

18. Iron containing protein in plasma is
   A) Prealbumin  B) Hemoglobin  C) Albumin  D) Globulin

19. Isotonic solutions have same
   A) Vapour pressure  B) Molality  C) Molarity  D) Mole fraction

20. The helical structure of a protein is stabilized by
   A) Peptide bonds  B) Hydrogen bonds
   C) Van der Waal’s forces  D) Glycosidic bonds

21. Ribose is an example of a
   A) Ketohexose  B) Ketopentose  C) Aldohexose  D) Aldopentose

22. Which one of the following molecules does not have a linear arrangement of atoms?
   A) Hydrogen sulfide  B) Ethylene  C) Beryllium hydride  D) Carbon dioxide

23. In graphite, carbon atoms are joined by
   A) Ionic bonds  B) Van der Waal’s forces
   C) Covalent bonds  D) Hydrogen bonds

$S-02$
24. Radioactive iodine is used for the disease diagnosis of
   A) Bone   B) Kidney   C) Thyroid   D) Leukemia

25. Which one of the following is an essential fatty acid for humans?
   A) Arachidonic acid   B) Myristic acid   C) Palmitic acid   D) Stearic acid

PART B

26. Which one of the following has the lowest freezing point:
   A) 0.10 M Sucrose   B) 0.10 M Urea
   C) 0.10 M Ethanol   D) 0.10 M Glucose

27. The longest bone in the human body is:
   A) Femur   B) Humerus   C) Clavicle   D) Tibia

28. The cell type which has the potential to become a functional cell type of different tissues of the body
   A) Hepatocyte   B) Lymphocyte   C) Stem cell   D) Monocyte

29. Identify the probiotic amongst the following:
   A) Penicillin   B) Lactobacilli   C) Amoxicillin   D) Streptococci

30. The densities of two gases are in the ratio of 1:16. The ratio of their rates of diffusion is
   A) 16:1   B) 4:1   C) 1:4   D) 1:16

31. C is
   A) A natural radioactive isotope   B) A natural non-radioactive isotope
   C) A synthetic radioactive isotope   D) A synthetic non-radioactive isotope

32. Which one of the following is amphoteric?
   A) Barium oxide   B) Beryllium oxide   C) Calcium oxide   D) Lithium Oxide
33. Hormone regulating blood glucose level is
   A) Thyroxine   B) Insulin
   C) Cortisol    D) Corticosterone

34. In humans, urea is the catabolic end product of
   A) Proteins   B) Nucleic acids   C) Fatty acids   D) Sterols

35. Anti-microbial substance in milk is:
   A) Complement B) Lactoferrin C) Transferrin D) Lactalbumin

36. Calorific value of one gram of carbohydrate is (in Kcal)
   A) 9   B) 4   C) 3   D) 2

37. "Fright & flight" hormone is
   A) Calcitonin B) Glucagon C) Melatonin D) Epinephrine

38. "Kwashiorkor" is caused due to the deficiency of:
   A) Carbohydrates B) Proteins C) Vitamins D) Minerals

39. The causative agent of "Swine flu" is:
   A) Influenza B virus   B) Hepatitis C virus
   C) Influenza A (H1N1) virus   D) HIV-1 virus

40. Which one of the following is not an anti-oxidant?
   A) Ascorbic acid B) Uric acid C) Vitamin E D) Hydrogen peroxide

41. The total number of chromosomes in human cell nucleus is
   A) 48   B) 46   C) 23   D) 22

42. In human blood transfusion, the following blood groups are considered as "Universal donor and "Universal recipient "respectively:
   A) O and A   B) O and AB   C) A and B   D) O and B

43. The functional unit of a human lung is
   A) Alveolus B) Glomerulus C) Malleus D) Fibroblast
44. The difficulty in reading small letters in old age is know as
   A) Hyperopia   B) Astigmatism   C) Presbyopia   D) Emmetropia

45. The light sensitive inner surface of the eye is
   A) Lens   B) Cornea   C) Retina   D) Pupil

46. Which one of the following is associated with C3 plants?
   A) Ribulose bisphosphate   B) Nitrogen
   C) Oxygen   D) Malate

47. The location of vision centre in human brain is
   A) Medulla oblongata   B) Cerebellum
   C) Thalamus   D) Occipital lobe

48. Which one of the following vitamins contains cobalt?
   A) Vitamin B6   B) Pantothenic acid   C) Vitamin B12   D) Biotin

49. The most common form of color vision deficit is
   A) Red and violet   B) Red and green
   C) Red and yellow   D) Green and violet

50. Protein present in rods and cones of retina is
   A) Opsin   B) Retinal   C) Albumin   D) Myelin

51. The route of administration of tetanus toxoid in humans is
   A) Orally   B) Intramuscular
   C) Intraperitoneal   D) Intravenous

52. Which one of the following parasitic infections causes blindness
   A) Amebiasis   B) Malaria
   C) Trypanosomiasis   D) Onchocerciasis
53. Anti-viral substance produced upon viral infection is
   A) Interleukin  B) Interferon  C) Complement  D) C-reactive protein

54. Pentose sugar present in RNA is
   A) Ribulose  B) Ribose  C) Deoxyribose  D) Deoxyribulose

55. Choose the **correct pair**:
   A) Iron deficiency : Anemia  B) Vitamin A deficiency : Color blindness
   C) Vitamin D : Pellagra  D) Calcium deficiency : Scurvy

56. Which one of the following is **not** true of aldosterone ?
   A) Produced by adrenal cortex  B) Increases reabsorption of sodium
   C) Decreases blood pressure  D) Synthesized from cholesterol

57. Identify the **incorrect** pair:
   A) Kidney : Nephron  B) Bilirubin : Bile pigment
   C) Pituitary : Insulin  D) Pepsin : Digestive enzyme

58. Which one of the following is a disaccharide ?
   A) Maltose  B) Fructose
   C) Galactose  D) Xylose

59. The visible light spectrum detectable by the human eye is
   A) 180-700 nm  B) 390-750 nm
   C) 300-800 nm  D) 200-600 nm

60. The average normal systolic blood pressure of a healthy adult male is (in mmHg)
   A) 100  B) 80  C) 150  D) 120

61. Chemically uric acid is a
   A) Peptide  B) Monosaccharide
   C) Purine derivative  D) Pyrimidine derivative
62. The artery which supplies blood to heart muscle in humans is
   A) Capsular    B) Carotid    C) Coronary    D) Subclavian

63. "Osteoporosis" is a disease related to
   A) Bone    B) Skin    C) Liver    D) Kidney

64. Major site of ATP synthesis in aerobic eukaryotes is
   A) Chloroplasts    B) Mitochondrion    C) Cytosol    D) Golgi

65. Thyroxine is produced by:
   A) Thymus    B) Anterior pituitary    C) Thyroid    D) Adrenal medulla

66. Which one of the following is a nucleoside?
   A) Cytidine    B) Uracil    C) Thymine    D) Guanine

67. The functional unit of the nervous system is
   A) Neuron    B) Axon    C) Dendron    D) Synapse

68. The covalent bond present in nucleic acids is
   A) Glycosidic    B) Phosphodiester    C) Peptide    D) Thioether

69. When heparin is added to the blood sample, blood does not clot, because
   A) Proteins are precipitated    B) Fibrinogen only is precipitated
   C) Inactivates clotting factors    D) Chelates calcium

70. The average total number of bones in an adult human skeleton is
   A) 220    B) 206    C) 212    D) 200

71. Which is the major cell type involved in allergic reactions?
   A) Neutrophil    B) Mast cell    C) Eosinophil    D) Basophil

72. The cranial nerve involved in taste perception is
   A) Glossopharyngeal    B) Vagus    C) Trochlear    D) Olfactory
73. The instrument used to measure the lung volume is:
   A) Calorimeter  B) Manometer  C) Spirometer  D) Colorimeter

74. Immunoglobulins are produced by:
   A) T lymphocytes  B) B lymphocytes  C) Macrophages  D) Eosinophils

75. Which one of the following is **not** a neurotransmitter?
   A) Acetyl choline  B) Nor epinephrine  C) Glutamic acid  D) Cortisol