

**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) Aldohehexose 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

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
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**PART B**

26. Which one of the following has the lowest freezing point:

- A) 0.10 M Sucrose B) 0.10M 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.  $^{14}\text{C}$  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 known 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 C<sub>3</sub> plants?  
A) Ribulose biphosphate 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 B<sub>6</sub> B) Pantothenic acid C) Vitamin B<sub>12</sub> 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 a 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 taste perception is  
A) Glosso-Pharyngeal 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