IM.Sc- Nursing Sciences
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 8 (Eight) 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. The route of administration of majority of the human vaccines is
   
   A) Intra-peritoneal  B) Intra-muscular  C) Intra-venous  D) Intra-cranial

2. Which of the following is a bacterial disease?
   
   A) Typhoid  B) Malaria  C) Rabies  D) Type I Diabetes mellitus

3. Cyanide poisoning is due to
   
   A) Degradation of hemoglobin  B) Paralysis of the limbs
   C) Inhibition of cellular respiration  D) Decreased body resistance

4. Goitre is a disease of the
   
   A) Liver  B) Lung  C) Kidney  D) Thyroid
5. Which one of the following is an amino acid?
   A) Arginine   B) Oxalic acid   C) Gluconic acid   D) Succinic acid

6. Plasma membrane of mammalian cells contain
   A) Cellulose   B) Chitin   C) Phospholipid   D) Glycogen

7. Sugar cane is a
   A) Xerophyte   B) Hydrophyte   C) Halophyte   D) Mesophyte

8. Which one of the following is used as biopesticide
   A) Bacillus licheniformes   B) Bacillus thuringiensis
   C) Lactobacillus casei   D) Rhizobium leguminosarum

9. A coenzyme is important for the
   A) Stability of enzyme   B) Synthesis of enzyme protein
   C) Enzyme activity   D) Degradation of the enzyme

10. Which one of the following exists as a spore in the soil?
    A) E. Coli   B) Clostridium tetani
    C) Vibrio cholerae   D) Shigella flexineri

11. The hormone responsible for secondary sex characteristics in a male is
    A) Progesterone   B) Estrogen   C) Testosterone   D) Estriol

12. The human heart tissue is innervated by the following cranial nerve:
    A) Optic   B) Vagus   C) Ocular   D) Trochlear

13. The blood cell which plays an important role in phagocytosis is:
    A) Lymphocyte   B) Neutrophil   C) Platelet   D) Red blood cell

14. Hemophilia is caused due to
    A) Anemia   B) Low platelet count
    C) Infection   D) Clotting factor deficiency
15. Hormone which increases blood glucose level during fasting is:
   A) Parathyroid hormone  B) Oxytocin  C) Glucagon  D) Vasopressin

16. Aspirin does not have the following property:
   A) Analgesic  B) Anti-pyretic  C) Anti-inflammatory  D) Anti-diuretic

17. Due to the presence of an unpaired electron, free radicals are
   A) Chemically reactive  B) Anions  C) Chemically inert  D) Cations

18. The number of hydrogen atom(s) attached to phosphorus atom in hypophosphorous acid is
   A) Zero  B) Two  C) One  D) Three

19. Which one of the following is a strong acid?
   A) Nitric acid  B) Calcium sulfate  C) Ammonia  D) Strontium hydroxide

20. Major site of ATP synthesis in an aerobic non-photosynthetic eukaryote is
    A) Lysosome  B) Nucleus  C) Golgi network  D) Mitochondrion

21. Which one of the following is a non-essential fatty acid for humans?
    A) Linoleic acid  B) Linolenic acid  C) Palmitic acid  D) Arachidonic acid

22. The major component of dietary fibre of humans is
    A) Starch  B) Fructose  C) Cellulose  D) Lactose

23. Synthetic isotope of hydrogen:
    A) Tritium  B) Protium  C) Deuterium  D) Quadrium

24. Element with the lowest melting and boiling point is
    A) Helium  B) Hydrogen  C) Sodium  D) Lithium

25. Which one of the following is not used as an antiseptic?
    A) Ethanol  B) Iodine  C) Sodium carbonate  D) Hydrogen peroxide

S-03
PART B

26. Vitamin required for vision is
A) Vitamin C  B) Vitamin A  C) Vitamin E  D) Vitamin D

27. Vegetable oil is converted to margarine by the process:
A) Auto-oxidation  B) Hydrogenation  
C) Methylation  D) Iodination

28. Choose the correct pair:
A) Deoxyribose : RNA  B) Creatine phosphate : Muscle  
C) Mitochondria : Glycolysis  D) Penicillin : Anti-fungal agent

29. During cell cycle, the phase in which DNA synthesis occurs is:
A) G0  B) M  C) S  D) G1

30. The average normal diastolic blood pressure of an adult human is ( in mmHg):
A) 110  B) 60  C) 80  D) 120

31. When the concentration of carbon dioxide in blood decreases, the pH will be
A) Increased  B) Decreased  C) No change  D) Neutral

32. Hormone which regulates basal metabolic rate is
A) Thyroxine  B) Calcitonin  C) Cortisol  D) Insulin

33. Bee wax is a
A) Nucleic acid  B) Carbohydrate  C) Lipid  D) Protein

34. Vitamin which increases calcium absorption in the human intestine is
A) Thiamine  B) Vitamin D  C) Biotin  D) Niacin

35. Carbon tetrachloride is a
A) Antiseptic  B) Antibiotic  C) Hepato toxin  D) Antacid
36. The vapor pressure of pure water at 100\(^{\circ}\)C is
   A) 760 mm Hg   B) 0.1 atm   C) One bar   D) 0.5 atm

37. The valency of phosphorus in \(H_3PO_4\) is
   A) 2   B) 5   C) 4   D) 1

38. An example of a coordinate covalent bond is exhibited by
   A) \(C_2H_2\)   B) \(H_2SO_4\)   C) \(NH_3\)   D) \(HCl\)

39. The disease in which the narrowing of the blood vessels is caused by lipid accumulation is
   A) Atherosclerosis   B) Vasculitis   C) Varicose veins   D) Thrombosis

40. Which of the following is a polar compound?
   A) \(HCl\)   B) \(H_2Se\)   C) \(CH_4\)   D) \(HI\)

41. What is the molar concentration when blood glucose concentration is 90 mg/100 ml. (Molecular weight of glucose is 180)
   A) 0.5 M   B) 0.05 M   C) 0.005 M   D) 0.02 M

42. Which one has the least penetrating power?
   A) \(\beta\)-rays   B) \(\alpha\)-rays   C) \(\gamma\)-rays   D) \(X\)-rays

43. The weakest acid amongst the following:
   A) \(HF\)   B) \(HCl\)   C) \(HBr\)   D) \(HI\)

44. “Amniocentesis” refers to
   A) Removal of the protective membranous sac around the embryo
   B) Removal of the outer developmental layer of the embryo
   C) Collection of Peritoneal fluid
   D) Collection of fluid form the amniotic sac

45. Which one of the following is levorotatory?
   A) Glucose   B) Sucrose   C) Fructose   D) Maltose
46. Extracellular matrix protein:
   A) Hyaluronic acid  B) Heparin  C) Hydroxyapatite  D) Collagen

47. Visual images are processed by:
   A) Optic nerve  B) Optic chiasm  C) Visual cortex  D) Optic tract

48. Central thermoregulatory center in humans is located in:
   A) Medulla oblongata  B) Cerebellum  C) Hypothalamus  D) Pons

49. Which one of the following vitamins is stored in the human liver?
   A) Vitamin B6  B) Vitamin C  C) Vitamin B12  D) Biotin

50. Hormone which regulates the excretion of water from the body:
   A) Gastrin  B) Glucagon  C) Secretin  D) Vasopressin

51. Diphtheria toxin is
   A) An endotoxin  B) An exotoxin  C) A toxoid  D) A vaccine

52. The organ with highest regenerative capacity is:
   A) Heart  B) Kidney  C) Liver  D) Brain

53. Leishmaniasis is a
   A) Bacterial infection  B) Viral disease  C) Fungal infection  D) Parasitic infection

54. A substance which inhibits viral multiplication is:
   A) Interleukin  B) Interferon  C) Complement  D) Albumin

55. A hospital acquired infection is called:
   A) Auto infection  B) Symbiosis  C) Nosocomial infection  D) Pneumoconiosis

56. Choose the correct pair:
   A) Iodine trap : Thymus  B) Vitamin A deficiency: Anemia
   C) Iron deficiency : Scurvy  D) Calcium deficiency : Osteoporosis
57. Calorific value of 1 gram of protein is (in Kcal)
   A) 6   B) 4   C) 3   D) 9

58. Identify the incorrect pair:
   A) Bile : Gall bladder   B) Bilirubin : Photosensitive
   C) Kidney : Glomerulus   D) Trypsin : Endocrine pancreas

59. Which one of the following is not a plant-derived toxin?
   A) Ricin   B) Abrin   C) Strychnine   D) Tetanus

60. A Rh (-) mother carrying a Rh (+) foetus during the second pregnancy can result in
   A) Erythroblastosis foetalis   B) Sickle cell anemia
   C) Pernicious anemia   D) Acromegaly

61. Glucose is found in the urine of diabetic individuals, since
   A) Glucose is not reabsorbed in the kidney
   B) The filtered glucose concentration is higher than the renal threshold
   C) Glucose is secreted by the renal tubular cells
   D) The filtered glucose can not be reabsorbed

62. Electrocardiogram is a record of
   A) Heart beats   B) Electrical conductivity of heart
   C) Heart sounds   D) Blood supply to the heart

63. The artery which supplies blood to heart muscle in humans is
   A) Capsular   B) Carotid   C) Coronary   D) Subclavian

64. “Pellagra” is caused due to the deficiency of
   A) Thiamine   B) Biotin   C) Pantothenic acid   D) Niacin

65. Fatty acid synthesis in humans mainly occurs in
   A) White adipose tissue   B) Liver   C) Brown adipose tissue   D) Spleen
66. The precursor for steroid hormones synthesis is:
   A) Cholesterol  B) Calciferol  C) Tocopherol  D) Epinephrine

67. The types of immunoglobulins which are found in normal humans
   A) 3  B) 5  C) 4  D) 2

68. Which one of the following is a nucleoside?
   A) Cytosine  B) Uridine  C) Thymine  D) Guanine

69. The last part of the small intestine is called
   A) Duodenum  B) Jejunum  C) Ileum  D) Caecum

70. The covalent bond present in a disaccharide is
   A) Glycosidic  B) Phosphodiester  C) Peptide  D) Thioether

71. When oxalate is added to the blood sample, blood does not clot, because
   A) Proteins are precipitated  B) Fibrinogen is precipitated
   C) Calcium is chelated  D) Red blood cells are lysed

72. The first cervical vertebra in humans is called
   A) Patella  B) Axis  C) Atlas  D) Humerus

73. Which is the major cell type participating in allergic response in humans?
   A) Mast cell  B) Monocyte  C) Eosinophil  D) Basophil

74. The substance which elicits immune response in vivo is
   A) Immunoglobulin  B) Complement  C) Immunogen  D) Defensin

75. Which one of the following is not a cell wall component of Gram positive bacteria?
   A) Lipopolysaccharide  B) Lipotechoic acid
   C) Peptidoglycan  D) Polysaccharide