

**DETAILED SYLLABUS FOR THE POST OF
DIETICIAN GRADE II
INSURANCE MEDICAL SERVICES
(Cat.No. 394/2019)**

Biochemistry (20 Marks)

(Unit 1) 1) Carbohydrates Definition, classification, physical and chemical properties, sources, biological role, metabolism, deficiency diseases, inborn errors of carbohydrate metabolism. Nutritional aspects of carbohydrate. 2) Proteins definition, classification, physical and chemical properties, sources, biological role, biological value of protein, protein metabolism, protein deficiency diseases and inborn errors of protein metabolism. 3) Lipids Definition, classification, physical and chemical properties, sources, biological role, metabolism, and inborn errors of lipid metabolism. Nutritional aspects of lipids. 4) Vitamins Definition, classification, characteristics, absorption & role of vitamins in metabolism, deficiency diseases. 5) Minerals Definition - types, absorption & role of minerals, minerals deficiency diseases. 6) Enzymes Definition, classification, mechanism of enzyme action, enzyme specificity, enzyme activity, factors affecting enzyme activity, uses of enzymes, enzymes in clinical diagnosis. 7) Nucleic acids DNA & RNA, structure & function, metabolism, genetic disorders. e.g. cancer, autoimmune diseases 8) Role of Hormones 9) Interrelation between Nutrients.

Zoology (20 Marks)

(Unit 1) Definition of anatomy physiology, general anatomy of human body. 2. Protoplasm Chemical, Physical and physiological properties of protoplasm. 3. Animal cell Structure, composition and function of Cell Membrane; structure and functions of Mitochondria, Endoplasmic reticulum, Ribosomes and Lysosomes; Structure of Nuclear envelope and its functions; Nucleolus—structure and function 4. Tissues Structure and functions of various types of tissues. Organs and organ systems an integrated approach. 5. Digestive system brief study of the anatomical organization of

the digestive tract and process of digestion, absorption and assimilation of food. 6. Circulatory system heart structure and working of heart blood vessels, lymph vessels and their functions. Lymphatic system concept of circulation at tissue level. Composition and functions of blood and lymph. Mechanism of blood coagulation blood grouping and blood transfusion. 7. Defense Mechanisms of the body Localization of infection, inflammation, active and passive immunity, introduction to T-lymphocytes and B-lymphocytes Immunization, failure of immunity Common Variable immuno deficiency syndrome (CVID) Acquired Immuno deficiency syndrome (AIDS). 8. Respiratory System Basic anatomy of the respiratory system. Process of respiration-Transport and exchange of oxygen and carbon dioxide in the body.

(UNIT 2) 9. Excretory System Excretory Organs–Structure and functions of Kidneys, Formation of urine, composition of urine, Role of Skin and Liver in excretion. 10. Body Fluids, Water and Electrolytic Balance. 11. Nervous system, Physiology of the nerve cell, Parts of the Central Nervous System and functions. Origin and propagation of nerve impulse, Synaptic transmission, neurotransmitters, Parts of Brain and their functions, Spinal cord – Structure and function, Importance of Automatic nervous system. 12. Endocrine Glands, structure and endocrine functions of – Hypothalamus Pituitary Gland, Thyroid Gland, Pancreas (Islets), Adrenal Gland, Testis, Ovary, General introduction to mode of hormones on target cells. 13. Reproductive System. Anatomy and functions of male reproductive organs, Anatomy and functions of Female reproductive organs. Menstrual cycle, Conception, Parturition, Contraception, Menopause and associated physiological problems.

Home Science (60 Marks)

(Unit 1) 1 Micro-organisms, Importance of Micro organisms, General classification, study of the morphological, cultural characteristics and bio-chemical activities of

bacteria. 2 Growth curve of typical bacterial cell, Growth requirement of bacteria, sterilization by physical and chemical methods. 3 Different sources of contamination, intrinsic and extrinsic parameters of Food which effect Microbial growth. b. General principles underlying Food spoilage, chemical changes caused by Microorganism c. Spoilage changes in different Food stuffs in brief. 4 Microbiology of Water-number and kinds of Microorganisms present, test for contamination of bacteria. 5 Food Hazards, Food Poisoning, Food borne Diseases, Food intoxication, Study of causative agent, symptoms of disease, prevention, control and vaccination. 6. Microbes in fermented Food – Alcoholic beverages, Indigenous fermented foods like Idli, Dhokla, Bread, Soya Bean Fermented Foods.

(UNIT 2) 1.Introduction to therapeutic diets.Basic concepts, principles, factors considered, classification, special feeding methods, pre and post operative diet. 2.Routine Hospital diets Regular diet, light diet, soft diet, full liquid diet, clear liquid diet and tube feedings 3. therapeutic adaptation of normal diet. Feeding infants and children problems in feeding in the Hospital. 4. Diet in fevers, typhoid fever, influenza and tuberculosis, Rheumatic fever & counseling. 5. Disease of Gastro Intestinal tract Constipation dysentery diarrhea, colitis. 6. Diet in Cancer & Counseling Risk factors, general reaction, nutritional problems, nutritional requirements, Role of food in prevention of Cancer. 7. Diet on Liver Diseases & Counseling Cirrhosis, hepatitis, hepatic coma, diseases of gall bladder, pancreatitis, 8. Diet in Cardio vascular disease & Counseling Atherosclerosis, coronary heart disease, lipidaemia, hypertension, congestive heart failure, myocardial infarction. 9. Diet in kidney diseases& counseling Nephritis, Acute chronic and renal failure, renal calculi. 10. Diseases of metabolic disorder. Arthritis, Diabetes mellitus and Gout. 11. Diseases of Nervous system & counseling Polyneuropathy, burning feet syndrome, anorexia nervosa and epilepsy. 12. Diseases of Endocrine disorders & counseling Hypothyroidism, Hyperthyroidism, Hypocalcemia 13. Anemia

(UNIT 3) Introduction to Nutrition Principles of Foods and Nutrition, Food groups, Diet and balanced diet, Meal planning, meal pattern, selection of adequate diet, BDA, RDA

of different age groups, use of Food exchange list. 2. Nutritional requirements for infancy, pre-school, school going and adolescents and adult hood. Factors affecting nutritional status, Nutritional problems, Packed lunch, and school lunch programmes, Food habits. 3. Nutritional requirements for expectant and nourishing mother, dietary modification – dietary problems, complications of pregnancy and Indian nourishing mother. 4. Geriatric Nutrition: Nutritional requirement, physiological changes, Nutritional changes, Nutritional problems during old age. 5. Nutritional problems in India-Anemia, overweight, under-weight, vitamin A-deficiency, PEM, goiter, thiamin deficiency. 6. Food selection purchase, storage, Food handling, sanitation and hygiene 7. Assessment of nutritional status by population sampling, Anthropometry, Biophysical assessment, Radiographic examination, Nutritional adequacy of diet consumed, clinical assessment, Biochemical assessment. 8. Diet survey methods - Population sampling & duration of survey, diet survey methods, Questionnaire, Food list method, Interview method, Food inventory of log book method, Weightment of raw food, Weightment of cooked food, Analysis of cooked food method, Adult consumption units, Nutrition and Health Education Definition, importance channels of nutrition education, nutrition education methods, planning for nutrition and health education. Techniques of nutrition education. Evaluation of nutritional programmes. Role of Nutrition Education Programmes in eradication of malnutrition. 10. Role of National & International Agencies to overcome malnutrition (ICDS, UNICEF, WHO, FAO, ICAR) 11. Food fads & fallacies. 12. Applied Nutritional Programmes ANP, MMP, SNPJCDS, FWPJPP, BNP.

(UNIT 4) Foundation Ingredients :- Carbohydrates, fats, Proteins, Minerals, Vitamins, Seasonings, Flavorings, Liquids, Thickening agents, Fats & Oils, Sweetening & Raisings agents. 2. Various cooking methods & Culinary terms (Western & Indian):- 3. Principles of cooking food with special application to fish, egg, meat, vegetables, cheese, pulses & cereals. 4. Salads :- Importance, types, common salad dressing. 5. Soups :- importance, types 6. Seasoning & flavoring 7. Menu & Meal planning, rules for compilation of menu. 8. Standardization of recipes & portion control. (9) (a) Food Production Management – establishing purchase specification, volume fore casting,

dealing with suppliers, receiving methods, stores organization, inventory control of stock, portion control, yield testing standard recipes.

(UNIT 5) Quantity Food Production :- Objectives of food preparation, working methods, cooking methods, food preservation, food spoilage. 10. Service Management a) Table Service, dining room management b) Delivery and Service of food in different systems. (11) Development of new recipes and modified recipes.12)Organization Organizational Chart, Organizational charts of Dietary/food service department, line of staff, authority, responsibility, power, delegation of authority, centralization and decentralization of food service. 13) Leadership, motivation and communication a) Dietician as a leader, leadership qualities that a dietitian should possess, styles of leadership and their effect on subordinates. b)Relation between motivation and performance, Hygiene Theory, Application of above theories to motivate subordinate communication, need for communication, process of communication, upward, downward and lateral communication, barriers to effective communication, listening. 14) Staffing and Personnel Management: Manpower planning, Recruitment, Selection, Induction, Performance Appraisal, Training Development. 15) Planning and Equipment Purchase, Layout Design:

NOTE: - It may be noted that apart from the topics detailed above, questions from other topics prescribed for the educational qualification of the post may also appear in the question paper. There is no undertaking that all the topics above may be covered in the question paper