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| SYLLABUS FOR SPECIAL RD EXAM 2022 |
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| **PHYSIOLOGIC AND METABOLIC CHANGES IN DISEASE** |
| **1. Normal cellular processes, Injury and response of cells to injurious agents, Cellular adaptations** |
| **2. Stress and Physiologic effects.** |
| **3. Drug, Food and Nutrient Interaction.** |
| **4. Regulation of Food intake and Pathogenesis of Obesity and Malnutrition and Starvation.** |
| **5. Patho physiology of GI tract diseases – anatomic, physiologic and functional changes, impact on**  **nutritional status and nutritional implications, post surgical complications and management,**  **malabsorption syndrome** |
| **6. Patho physiology of liver diseases – Progression of liver disease metabolic and nutritional**  **implications, role of specific nutrients and alcohol.** |
| **7. Diseases of the Gall Bladder and Pancreas – Pathophysiologic changes – metabolic and nutritional**  **implications, Dyslipidemias** |
| **8. Cardio-vascular Diseases – Pathogenesis, role of nutrients in prevention – metabolic and**  **nutritional implications, Dyslipidemias.** |
| **9. Diseases of the renal system – etiology and pathogenesis – changes in function with progression of**  **diseases, metabolic and nutritional implications, water and electrolyte balance.** |
| **10. Metabolic Disorders, Diseases of Endocrine Glands and Inborn Errors of Metabolism.**  **Diabetes, Hyper and Hypothyroidism, Inborn errors of carbohydrate and protein**  **metabolism.** |
| **11. Cancer – carcinogenesis – pathogenesis and progression of cancer, role of nutrients, foodstuffs and**  **food additives in cancer. Therapies and their clinical and metabolic implications.** |
| **12. Immunity and infection – diarrhea, AIDS, Covid Pneumonitis , ARDS, Respiratory problems.** |
| **13. Musculo-skeletal problems, arthritis, osteoporosis** |
| **14. Glands and Endocrine System –** |
| o **Liver – structure and function** |
| o **Gall Bladder – structure and function** |
| o **Entero hepatic circulation** |
| o **Pancreas – structure and function** |
| * **Endocrine system , Hormones – types and functions, role in metabolism. Endocrine disorders** |
| o **Regulation of Hormone Secretion** |
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| **HUMAN NUTRITION AND MEAL MANAGEMENT** |
| 1. **Concept and Definition of terms – Nutrition, Malnutrition, Health, Brief history of Nutritional**   **Science. Scope of NutritioN** |
| 1. **Minimum Nutritional Requirements and RDA. Formulation of RDA and Dietary Guidelines –**   **Reference Man and Reference Woman.** |
| 1. **Body Composition and Changes through the Life Cycle.** |
| **4. Energy in Human Nutrition – Energy Balance, Assessment of Energy Requirements.** |
| **A - Proteins – Protein Quality (BV, PER, NPU), Digestion and Absorption, Factors affecting protein bio- availability including Anti nutritional factors. Requirements.** |
| 1. **Lipids – Digestion and Absorption, Intestinal resynthesis of triglycerides – Types of fatty acids,**   **Role and nutritional significance (SFA, MUFA, PUFA, W-3)** |
| 1. **Carbohydrates – Digestion and Absorption. Blood glucose and Effects of different carbohydrates on blood glucose, glycemic index.** |
| **8. Dietary Fibre – Classification, Composition, Properties and Nutritional status significance.** |
| **9. Minerals and Trace Elements – Physiological role, Bioavailability and Requirements.** |
| **10. Vitamins – Physiological role, Bioavailability and Requirements.** |
| **11. Water – Functions, Requirements.** |
| **12. Nutritional requirements for different age groups with rationale. Factors affecting these**  **requirements.** |
| **13. Effect of cooking and home processing on digestibility and nutritive value of foods.** |
| **14. Improving nutritional value through different methods – germination, fermentation, combination**  **of foods.** |
| **15. Basic principles of meal planning.** |
| **16. Nutritional considerations for planning meals for** |
| o **Adults – male and female, different levels of physical activity.** |
| o **Pregnancy and Lactation** |
| O **Feeding of young children 0 -3 years** |
| o **Old age** |
| o **Athletes** |
| **17. Nutritional considerations in brief for the following:** |
| o **Military, naval personnel** |
| o **Astronauts and food for space travel** |
| o **Emergencies such as drought, famine, floods etc.** |
| **18. Nutritional problems of communities and implications for public health. Common Nutritional**  **Problems in India. Incidence – National, Regional. causes: Nutritional and Non-Nutritional signs,**  **symptoms, effect of deficiency and treatment** |
| o **PEM** |
| o **Micronutrient Deficiencies** |
| o **Fluorosis** |
| o **Correction/Improvements in Diets** |
| **19. Hazards to Community Health and Nutritional status** |
| o **Adulteration in food** |
| o **Pollution of water, air** |
| o **Waste management** |
| o **Industrial effluents, sewage** |
| o **Pesticide residue in food** |
| o **Toxins present in food – mycotoxins etc.** |
| **20 . Health and Nutrition Education – Steps in planning, implementation, and evaluations. Use of**  **educational aids – visual, audio, audio-visual, traditional media etc.** |
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| **DIET THERAPY (THEORY)** |
| **1. Diet Therapy and Nutritional Care in Disease** |
| * **The Nutritional Care Process** |
| * **Nutritional Care Plan** |
| * **Assessment and Therapy in Patient Care** |
| * **Implementation of Nutritional Care** |
| **2. Nutritional Intervention – Diet Modifications** |
| **Adequate normal diet as a basis for therapeutic diets** |
| * **Diet Prescription** |
| * **Modification of Normal Diet** |
| * **Nomenclature of Diet Adequacy of Standard Hospital Diets** |
| * **Psychological factors in feeding the sick person** |
| **3. Interactions between Drugs, Food Nutrients and Nutritional Status** |
| * **Effect of drugs on Food and Intake, Nutrient Absorption, Metabolism, and Requirements.** |
| * **Drugs affecting intake of food and nutrients** |
| * **Absorption** |
| * **Metabolism and excretion** |
| * **Nutritional status** |
| * **Summary of action of some common drugs** |
| * **Effect of food, nutrients and nutritional status on absorption a nd metabolism of drugs** |
| **4. Disease of the G. I. System – Nutritional Assessment** |
| * **Pathogenesis of G.I. Disease with special reference to upper G. I. Tract and ulcers.** |
| * **Diseases of esophagus and dietary care** |
| * **Diseases of stomach and dietary care** |
| * **Gastric and duodenal ulcers** |
| * **Predisposing factors and Treatment** |
| * **Brief medical therapy, rest, antacids, other drugs and dietary care** |
| * **Food acidity, foods that cause flatulence, factors that damage G. I. Mucosa** |
| * **Foods stimulating G. I. Secretion** |
| * **Diet and Eating Pattern** |
| * **Diet Recommendations** |
| * **Liberal Approach Vs Traditional Approach** |
| * **Possible nutritional and dietary inadequacies** |
| * **Gastrectomy** |
| * **Intestinal Diseases like IBD** |
| * **Flatulence, Constipation, Irritable Bowel, Hemorrhoids,. Diarrhoea, Steatorrhoea, Diverticular disease, Inflammatory Bowel Disease, Ulcerative Colitis.** |
| * **Treatment and Dietary Care in the above mentioned conditions.** |
| * **Malabsorption Syndrome** |
| * **Celiac Sprue, Tropical Sprue** |
| * **Intestinal Brush border deficiencies ( Acquired Disaccharide Intolerance)** |
| * **Protein Losing Enteropathy** |
| * **Dietary Care Process** |
| **5. Diet in Diseases of the Liver, Pancreas and Biliary System** |
| * **Nutritional care in Liver disease in the context of results of specific Liver Function Tests.** |
| * **Dietary Care & Management in Viral Hepatitis, Cirrhosis of Liver, Hepatic Encephalophathy, Wilson’s disease.** |
| * **Dietary care and management in diseases of Gall Bladder and Pancreas.** |
| * **Biliary Dyskinesia, Cholelithiasis, Cholecystitis,**   **Cholecystectomy, Pancreatitis, Zollinger- Ellison Syndrome.** |
| **6. Diet in Disease of the Endocrine Pancreas Diabetes Mellitus and Hypoglycemia** |
| * **Classification** |
| * **Physiological symptoms and disturbances, diagnosis (FBG and OGTT)** |
| * **Management of Diabetes Mellitus** |
| * **Clinical Vs Chemical control** |
| * **Hormonal Therapy** |
| * **Oral Hypoglycemic Agents** |
| * **Home Glucose Monitoring** |
| * **Glycosylated Hemoglobin** |
| * **Urine Testing** |
| * **Exercise** |
| **Dietary care and Nutritional Therapy – The Diet Plan, Meal planning with and without Insulin, Special Dietetic Foods, Sweeteners and Sugar Substitutes** |
| **Diabetes in Pregnancy, Elderly, Surgery, Diabetic diets in Emergency, Illness, Diabetic coma, Insulin reaction, Juvenile diabetes, Patient Education in Diabetes** |
| * **Hypoglycemia -classification, symptoms, fasting state**   **hypoglycemia, Postprandial or reactive hypoglycemia, Early alimentary and late reactive hypoglycemia, Idiopathic**  **hypoglycemia, Dietary treatment in reactive hypoglycemia.** |
| **7. Dietary care in diseases of the Adrenal Cortex, Thyroid gland and Parathyroid gland.** |
| * **Functions of the gland and hormones and their insufficiency, metabolic implications, clinical symptoms.** |
| * **Dietary treatment as supportive to other forms of therapy** |
| * **Adrenal cortex insufficiency, Hyper and Hypothyroidism (goitre), Hypoglycemia.** |
| * **Nutritional care for Weight Management** |
| * **Regulation of energy intake and balance of body weight** |
| * **Control of appetite and food intake – Neural control, hormonal control, insulin, estrogen and other peptides and hormones.** |
| * **Identifying the obese** |
| * **Types of obesity, Health risks** |
| * **Causes, Psychology of obesity, Theories of obesity, Physiology of the obese state** |
| * **Thermogenesis, Thyroid hormones** |
| * **Treatment of Obesity** |
| * **Diets in Obesity – Starvation, Fasting** |
| * **Evaluation of some common diets, Protein-sparing modified fast, High protein diets** |
| * **Balanced Energy Reduction** |
| * **Foods to include, fibre foods allowed as desired, alcohol, snacks and beverages** |
| * **Psychology of weight reduction** |
| * **Behavioural Modification – Psychotherapy, pharmacology, exercise & physical activity, Surgery, prevention of weight gain & obesity.** |
| * **Underweight – Etiology and Assessment, High calorie diets for weight gain, Diet plan, Suggestions for increasing calories in the diet, Anorexia Nervosa and Bulimia** |
| **8. Diseases of the Circulatory System** |
| * **Atherosclerosis – Etiology, risk factors, diet** |
| * **Hyperlipidemias** |
| * **Brief review of Lipoproteins and their metabolism** |
| * **Clinical and nutritional aspects of Hyperlipidemias** |
| * **Classification and Dietary care of Hyperlipidemias** |
| * **Nutritional care in Cardiovascular disease** |
| * **(Ischemic heart disease Pathogenesis of sodium and water retention in Congestive Heart Disease. Acute and Chronic Cardiac Disease, Acute – Stimulants, food & consistency, Chronic – Compensated and decompensated states, Sodium Restriction in Cardiac Diseases, Diet in Hypertension – Etiology, Prevalence, Renin- Angiotensin mechanism, Salt and Blood pressure, Drugs and Hypertension, Cerebrovascular diseases and diet in brief).** |
| **9. Anemia** |
| * **Resulting from Acute Hemorrhage** |
| * **Nutritional anemia** |
| * **Sickle cell anemia** |
| * **Thalassemia** |
| * **Pathogenesis and dietary management in the above conditions** |
| **10. Renal Disease** |
| * **Physiology & function of normal kidney – a brief review** |
| * **Diseases of the kidney, classification** |
| * **Glomerulo nephritis – Acute and Chronic – Etiology, Characteristics, Objectives, Principles of Dietary Treatment and Management** |
| * **Nephrotic syndrome – objectives, principles of Dietary Treatment and Management.** |
| * **Uremia and Renal Failure** |
| * **History, General Principles of Protein Nutrition in Renal Failure and Uremia.** |
| * **Acute Renal Failure – Causes, dietary management fluid, sodium and potassium balance, protein and energy requirements** |
| * **Chronic renal failure medical treatment, Renal transplants. Dialysis and types hemodialysis, Peritoneal Dialysis & Continuous Ambulatory Peritoneal Dialysis (CAPD). Dietary Management in conservative treatment, dialysis and after renal transplantation.** |
| * **Use of Sodium and Potassium Exchange lists in Renal (diet planning).** |
| * **Chronic renal failure in patients with diabetes mellitus** |
| * **Chronic renal failure in children** |
| * **Nephrolithiases – Etiology, types of stones, Nutritional care, alkaline-ash diets** |
| **10. Allergy** |
| * **Definitions, symptoms, mechanism of food allergy** |
| * **Diagnosis – History, Food record** |
| * **Biochemical and Immunotesting (Brief)** |
| * **Elimination diets** |
| * **Food selection** |
| * **Medications (brief)** |
| * **Prognosis food Allergy in infancy – Milk sensitive enteropathy; Colic, Intolerance to breast milk, prevention of Food Allergy.** |
| **11. Diseases of Nervous System, Behavioural Disorders and Musculo Skeletal System** |
| * **Neuritis and polyneuritis** |
| * **Migraine, headache** |
| * **Epilepsy** |
| * **Multiple sclerosis** |
| * **Hyperkinetic Behaviour Syndrome** |
| * **Orthro molecular psychiatry and mental illness (Brief) Definition, etiology, dietary treatment and prognosis in the above conditions.** |
| * **Arthritis –** |
| * **Rheumatoid Arthritis** |
| * **Osteoarthritis** |
| * **Symptoms, dietary management** |
| **12. Nutrition in Cancer** |
| * **Types, symptoms, detection** |
| * **Cancer therapies and treatment – side effects and nutritional implications** |
| * **Goals of care and guidelines for oral feeding** |
| * **Accommodating side effects** |
| **Enteral tube feeding – Nasogastric, Gastrostomy, Jejunostomy** |
| * **Parenteral Nutrition** |
| * **Pediatric patients with cancer** |
| * **The terminal cancer patient** |
| **13. Nutrition in Physiological Stress** |
| * **Physiological stress and its effect on body, nutritional implications.** |
| * **Fevers and infections** |
| * **Surgery and Management of Surgical Conditions** |
| **Parenteral Nutrition – Types, mode, and composition of feeds** |
| * **Tube feeding – Routes, modes, composition, care to be taken during feeding** |
| * **Dietary guidelines** |
| * **Burns** |
| * **Metabolic implications – nutritional requirement** |
| * **Management and nutritional care** |
| * **Nutritional Management of Patients with HIV, AIDS** |
| * **Nutritional Management – Counselling and Management** |
| * **Goals of care** |
| * **Timing of food presentation** |
| * **Guidelines for oral feeding anti-tumour therapy** |
| * **Accommodating taste changes** |
| * **External tube feeding** |
| * **Parenteral nutrition** |
| * **Patient co-operation** |
| * **Pediatric patients with cancer** |
| * **The terminal cancer patient** |
| * **Misconceptions in nutritional care** |
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| **NUTRITION EDUCATION AND DIETETIC COUNSELING** |
| **1. Dietitian as part of the Medical Team and Outreach Services.** |
| **2. Clinical Information – Medical History and Patient Profile**  **Techniques of obtaining relevant information, Retrospective information, Dietary Diagnosis, Assessing food and nutrient intakes, Lifestyles,**  **Physical activity, Stress, Nutritional Status. Correlating Relevant**  **Information and identifying areas of need.** |
| **3. . The Care Process – Setting goals and objectives short term and long term, Counselling and Patient Education, Dietary Prescription.** |
| **4. Motivating Patients.** |
| **5. Working with –** |
| * **Hospitalized patients (adults, pediatric, elderly, and handicapped), adjusting and adopting to individual needs.** |
| * **Outpatients (adults, pediatric, elderly, handicapped), patients’ education, techniques and modes.** |
| **6. . Follow up, Monitoring and Evaluation of outcome, Home visits** |
| **7. Maintaining records, Reporting findings, Applying findings, Resources and Aids for education and counselling, Terminating counselling, Education for individual patients, Use of regional language,**  **linguistics in communication process, Counselling and education.** |
| **REFERENCE : Krause. Food, Nutrition & Diet Therapy** |
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| **FOOD SERVICE MANAGEMENT** |
| **1. Introduction to food services and catering industry, Development of Food Service Institutions in India, Types of Services as affected by changes in the environment.** |
| **2. Hospital food service as a speciality – Characteristics, rates and**  **services of the food production, service and management in hospitals. Role of the Food Service Manager / Dietitian.** |
| **3. . Organizations – Types of organizations and characteristics. Organizational charts.** |
| **4. Catering Management – Definition, Principles and Functions, Tools of Management Resources. Attributes of a successful manager.** |
| **5. Approaches to Management Traditional, Systems Approach, Total Quality Management.** |
| **6. Management of Resources – Capital, Space, Equipment and Furniture, Materials, Staff, Time and Energy, Procedures Physical facility design and planning. Equipment selection.** |
| **7. Purchase and store room management – Purchase systems, specifications, food requisition and inventory systems, quality assurance.** |
| **8. Human Resource Management** |
| * **Definition, Development and policies** |
| * **Recruitment Selection, Induction** |
| * **Employment procedures: Employee Benefits, Training and Development,**   **Human Relations, Job description, Job specifications, Job evaluation, Personnel appraisal.** |
| * **Trade Union Negotiations and Settlement.** |
| **9. Financial Management (in brief since there is a separate subject Food Cost and Quality Control) –**  **Elements of Financial management, Budget Systems and accounting, Budget preparation.** |
| **10. Food Production and Service Operations** |
| * **General Planning** |
| * **Preliminary planning** |
| * **Consideration of patients with specific nutritional and dietary needs, labour use and productivity.** |
| * **Flow pattern.** |
| **11. Hygiene and its importance and application – Personal hygiene – care of skin, hair, hands, feet,**  **teeth, Use of cosmetics and jewellery, Grooming, Uniform, Evaluation of personal hygiene,**  **Training staff.** |
| **12. Safe handling of food – Control measures to prevent food borne diseases and precautions to be**  **taken by food handlers. Reporting of cold, sickness, boils, septic wounds etc.** |
| **13. Waste disposal, collection, storage and proper disposal from the premises.** |
| **14. Legal administration and quality control, laws relating to food hygiene.** |
| **15.Hygiene and its importance and application – Personal hygiene – care of skin, hair, hands, feet,**  **teeth, Use of cosmetics and jewellery, Grooming, Uniform, Evaluation of personal hygiene,**  **Training staff.** |
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