R2098

Sub. Code
558101

M.Sc. DEGREE EXAMINATION, NOVEMBER – 2024

First Semester

Nutrition and Dietetics

HUMAN PHYSIOLOGY

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** the following objective type questions by choosing the correct option.

1. What is the full form of DNA? (CO1, K1)
   (a) Deoxyribonucleic acid
   (b) Deoxynucleic acid
   (c) Dehydroxyribonucleic acid
   (d) Dehydroxynucleic acid

2. Fatty tissue is also known as ————. (CO1, K1)
   (a) Elastic tissue
   (b) Adipose tissue
   (c) Loose connective tissue
   (d) Cartilage tissue

3. Synthesis of fibrinogen occurs in _____. (CO2, K1)
   (a) Pancreas (b) Brain
   (c) Liver (d) Lungs

4. Which of the following carry oxygenated blood from lungs to the heart? (CO2, K1)

(a) Superior vena cava
(b) Pulmonary veins
(c) Aorta
(d) Right ventricle

5. Exchange of gases between tissues and blood is called ————. (CO3, K1)

(a) Internal respiration
(b) External respiration
(c) Pulmonary respiration
(d) All of these

6. Chyme is in a _____ form of digested food in the stomach. (CO3, K1)

(a) Solid (b) Liquid
(c) Semi-solid (d) Semi-liquid

7. Testes in males which secretes ———— hormone. (CO4, K1)

(a) Oestrogen (b) Progesterone
(c) Androgens (d) Prolactin

8. Sweet taste is felt at the ———— of the tongue. (CO4, K1)

(a) Tip (b) Back
(c) Back edge (d) Front edge

9. Where the body's adrenal glands are situated? (CO5, K1)

(a) Brain (b) Kidney
(c) Liver (d) Heart

10. Secretion of sweat is controlled by ———— nerves. (CO5, K1)

(a) Cranial (b) Enteric
(c) Parasympathetic (d) Sympathetic

Part B (5 × 5 = 25)

Answer **all** the questions not more than 500 words each.

11. (a) Illustrate the structure and functions of various epithelial tissues. (CO1, K2)

Or

(b) Summarize the cell organelles and their functions. (CO1, K2)

12. (a) Examine the important indices of RBC and WBC. (CO2, K3)

Or

(b) Express the different properties of the heart and its functions. (CO2, K3)

13. (a) How to interpret the three pairs of salivary glands in digestive system? (CO3, K4)

Or

(b) Explain about the importance of liver in digestive system. (CO3, K4)

14. (a) How to express the role of kidneys in water and electrolyte balance? (CO4, K5)

Or

(b) Write a summary of fertilization and implantation in the female reproductive system. (CO4, K5)

15. (a) Describe the adrenal cortex and adrenal medulla of the adrenal gland in detail. (CO5, K6)

Or

(b) Give a brief explanation of any two exocrine glands. (CO5, K6)

Part C (5 × 8 = 40)

Answer **all** the questions not more than 1000 words each.

16. (a) Explain in detail about the physiology of cytoplasm. (CO1, K2)

Or

(b) Show the different classification of connective tissue. (CO1, K2)

17. (a) Categorize the fibrous, cartilagenous and synovial joints in the skeleton system. (CO2, K3)

Or

(b) How to relate the erythroblastosis fetalis and blood transfusion? (CO2, K3)

18. (a) Generate the anatomy and physiology of respiratory organs. (CO3, K4)

Or

(b) Examine the mechanism of the secretion of digestive juices and its regulation during digestion. (CO3, K4)

19. (a) Illustrate the structure of kidney and write about the composition of urine. (CO4, K5)

Or

(b) Explain the five sensory organs and their functions in brief. (CO4, K5)

20. (a) Evaluate the secretion and functions of thyroid hormones in thyroid gland. (CO5, K6)

Or

(b) Explain in detail about the reflexes of nervous system. (CO5, K6)

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R2099	Sub. Code
	558102

M.Sc. DEGREE EXAMINATION, NOVEMBER – 2024

First Semester

Nutrition and Dietetics

NUTRITION AND HEALTH

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** the following objective questions by choosing the correct option.

1. ———————— is called as body building food. (CO1, K1)

   (a) Carbohydrate (b) Protein

   (c) Fat (d) Vitamins

2. When basal metabolic rate is measured, a subject must be ————————? (CO1, K1)

   (a) Resting (b) Jogging

   (c) Working condition (d) Running

3. Which of the following types of diabetes affects pregnant women? (CO2, K1)

   (a) Type I (b) Type II

   (c) Gestational (d) MODY

4. The word "parturition" refers to ————————. (CO2, K1)

   (a) Healthy child (b) Healthy women

   (c) Mortality rate (d) Childbirth

5. Average weight of healthy new born baby is around ————————. (CO3, K1)

(a) 2.5 (b) 3.2

(c) 4.2 (d) 3.9

6. PEM most often occurring in ————————. (CO3, K1)

(a) Infants and young children

(b) Pregnant and Lactating mothers

(c) Adult man and woman

(d) Senior citizens

7. Which of the following age groups is considered as an adolescent by the WHO? (CO4, K1)

(a) 10-15 years (b) 10-19 years

(c) 20-25 years (d) 20-29 years

8. Osteoporosis is caused by a diet low in ———————— rich foods. (CO4, K1)

(a) Calcium (b) Iron

(c) Zinc (d) Copper

9. The responsiveness of the human immune system has been shown to ———————— with age. (CO5, K1)

(a) Increase (b) Decrease

(c) Stable (d) Normal

10. Which of the following are considered as types of sports drinks? (CO5, K1)

(a) Hypotonic (b) Isotonic

(c) Hypertonic (d) All of these

Part B (5 × 5 = 25)

Answer **all** the questions not more than 500 words each.

11. (a) Briefly explain about the concept of adequate nutrition and malnutrition. (CO1, K2)

Or

(b) Explain the basis for requirements in recommended dietary allowances. (CO1, K2)

12. (a) Summarize the maternal weight gain during pregnancy. (CO2, K3)

Or

(b) Write about the physiological adjustments during lactation. (CO2, K3)

13. (a) How to interpret the causes of the mortality rate among children under five? (CO3, K4)

Or

(b) Explain about the dietary allowances for preschoolers and list out the supplementary foods. (CO3, K4)

14. (a) Determine the changes of growth that occur during adolescence. (CO4, K5)

Or

(b) Give a brief overview of PCOD in adult women. (CO4, K5)

15. (a) Explain about the different process of aging. (CO5, K6)

Or

(b) Discuss in detail about types of space foods in space nutrition. (CO5, K6)

Part C (5 × 8 = 40)

Answer **all** the questions not more than 1000 words each.

16. (a) Write a summary of the meal planning guidelines. (CO1, K2)

Or

(b) Express about the measurement of basal metabolism in energy requirement. (CO1, K2)

17. (a) Discover the factors that affecting the nutritional status of pregnant women. (CO2, K3)

Or

(b) How to identify the efficiency of milk production and write the significance of diet during lactation? (CO2, K3)

18. (a) Examine the need for weaning foods and its types. (CO3, K4)

Or

(b) Discover the food habits and nutritional intake of preschoolers. (CO3, K4)

19. (a) Evaluate the nutritional status of school going children. (CO4, K5)

Or

(b) Explain in detail about hormonal changes during menopause. (CO4, K5)

20. (a) Elaborate the modification of diet during old age. (CO5, K6)

Or

(b) Discuss about the fluid balance and fluid replacement guidelines of an athlete. (CO5, K6)

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R2100

Sub. Code
558103

M.Sc. DEGREE EXAMINATION, NOVEMBER – 2024

First Semester

Nutrition and Dietetics

ADVANCED FOOD SCIENCE

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** the following objective type questions by choosing the correct option.

1. ———————— refers to covering of food with a layer of crumbs, flour, or other substances before cooking. (CO1, K1)

   (a) Sprouting (b) Blanching

   (c) Coating (d) Grinding

2. The human analysis of the taste, smell, sound, feel and appearance of food (CO1, K1)

   (a) Taste test panel (b) Sensory evaluation

   (c) Colorimeter (d) Test panel

3. Which of the following has highest protein content? (CO2, K1)

   (a) Oat (b) Ragi

   (c) Wheat (d) Bajra

4. How many servings of vegetables do we need each day? (CO2, K1)

   (a) 6-11 (b) 2-3

   (c) 3-5 (d) 1-2

5. Which of the following are milk processing operations? (CO3, K1)

(a) Clarifications (b) Pasteurization

(c) Homogenization (d) All of the above

6. The egg white is called ———————— (CO3, K1)

(a) Albumen (b) Chalaza

(c) Shell (d) Yolk

7. In confectionery industry this natural sugar is also called as dextrose. Which among the following is the correct answer? (CO4, K1)

(a) D-fructose (b) D-glucose

(c) D-lactose (d) D-glucose

8. Vegetable oil is manufactured by ———————— (CO4, K1)

(a) Saponification (b) Hydrogenation

(c) Wintensation (d) Oxidation

9. Which food additive is used as an emulsifier in products such as salad dressings and mayonnaise? (CO5, K1)

(a) Lecitin (b) Carrageenan

(c) Xantan gum (d) Guar gum

10. What is the reason farmers cultivate GM crops? (CO5, K1)

(a) Increase yields

(b) Decrease pesticides input costs

(c) Save management time

(d) All the above

Part B (5 × 5 = 25)

Answer **all** the questions not more than 500 words each.

11. (a) What are the properties of food hydrocolloids? (CO1, K2)

Or

(b) List out the advantages of objective evaluation. (CO1, K2)

12. (a) Identify the nutrient composition of cereals. (CO2, K3)

Or

(b) Discover the factors affecting storage life of vegetables. (CO2, K3)

13. (a) Compare between pasteurisation and homogenisation of milk. (CO3, K4)

Or

(b) Explain the tendensing of meat. (CO3, K4)

14. (a) Justify the changes of fat on heating. (CO4, K5)

Or

(b) Explain the methods in preparation of good coffee. (CO4, K5)

15. (a) Interpret of adding food additives to the food. (CO5, K6)

Or

(b) Categorise the nutritive value of different genetically modified foods. (CO5, K6)

Part C (5 × 8 = 40)

Answer **all** the questions not more than 1000 words each.

16. (a) How does protein play an important role in denaturation and browning? Explain. (CO1, K2)

Or

(b) Describe the procedures for determination and monitoring of shelf life. (CO1, K2)

17. (a) Discover the different types of rice products and briefly write on them. (CO2, K3)

Or

(b) Develop how to prevent enzymatic browning in fruits. (CO2, K3)

18. (a) Classify non-fermented milk products and describe them. (CO3, K4)

Or

(b) Outline the neat diagram of factors affecting egg white and discuss them. (CO3, K4)

19. (a) Interpret the steps involved in processing of refined oil and describe it. (CO4, K5)

Or

(b) Compare between crystalline and non-crystalline candies and write in detail. (CO4, K5)

20. (a) Classify food additives and write down its uses in foods. (CO5, K6)

Or

(b) Examine the development of genetically modified food in the field of food science and technology. (CO5, K6)

R2101

Sub. Code
558501

M.Sc. DEGREE EXAMINATION, NOVEMBER – 2024

First Semester

Nutrition and Dietetics

Elective – HOME SCIENCE EDUCATION AND COMMUNICATION

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** the following objective type questions by choosing the correct option.

1. Animal fibers like wool or silk are mostly ————————. (CO1, K1)

   (a) Cellulose (b) Protein

   (c) Mineral (d) Pulp

2. Satin, twill and plain are types of ————————. (CO1, K1)

   (a) Weaves (b) Fabric

   (c) Fibers (d) Knits

3. The most widely used bleaches are ————————. (CO2, K1)

   (a) Chlorine bleaches

   (b) Hydrogen peroxide bleaches

   (c) Both (a) and (b)

   (d) None of the above

4. Benefits of making eco-friendly products (CO2, K1)

(a) Water and energy efficiency

(b) Healthy indoor environment

(c) Lower carbon footprint

(d) All of these

5. Home management is a planned and ———— activity for doing work. (CO3, K1)

(a) Systematic (b) Intangible

(c) Unorganized (d) Need to add

6. ———— is used to achieve goals and assessing standards. (CO3, K1)

(a) Decision making (b) Power

(c) Intelligent (d) None of these

7. These colors are given restful, calm and relaxing (CO4, K1)

(a) Hue (b) Primary colors

(c) Cool colors (d) Shape

8. Ikebana is the ———— art of flower arrangement. (CO4, K1)

(a) India (b) Japanese

(c) China (d) Europe

9. Which one of the following is the most important communication skills? (CO5, K1)

(a) Active listening

(b) Passive listening

(c) Objective listening

(d) Biased listening

10. ———————— communication is between teacher and student. (CO5, K1)

(a) Interpersonal communication

(b) Semantic communication

(c) Didactic communication

(d) Pragmatic communication

Part B (5 × 5 = 25)

Answer **all** questions not more than 500 words each.

11. (a) Outline the properties of man-made fibres.(CO1, K2)

Or

(b) Explain about the merits and demerits of woven fabrics. (CO1, K2)

12. (a) Show the process of dry-cleaning. (CO2, K2)

Or

(b) Summarize the importance of Eco-friendly processing. (CO2, K2)

13. (a) List out the importance of home management. (CO3, K3)

Or

(b) Differentiate between short-term and long-term goals. (CO3, K3)

14. (a) Construct the prang colour chart. (CO4, K3)

Or

(b) Discuss the symmetrical and asymmetrical flower arrangement. (CO4, K3)

15. (a) Examine the barriers to effective communication in the class room. (CO5, K4)

Or

(b) Interpret the seven C's of communication. (CO5, K4)

Part C (5 × 8 = 40)

Answer **all** questions not more than 1000 words each.

16. (a) Explain the classification of the yarn. (CO1, K2)

Or

(b) Show the testing and identification of yarn. (CO1, K2)

17. (a) Explain the laundering and laundering agents. (CO2, K2)

Or

(b) Explain the effluent treatment of water and its purpose in textile industries. (CO2, K2)

18. (a) Develop the characteristics and steps in decision making. (CO3, K3)

Or

(b) Construct the techniques of work simplifications. (CO3, K3)

19. (a) Explain the elements of design used in home decor. (CO4, K3)

Or

(b) Give brief notes on the traditional, oriental, modern and dried flower arrangement. (CO4, K3)

20. (a) Interpret the objectives and process of communication. (CO5, K4)

Or

(b) Examine the purpose of communication in education. (CO5, K4)

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R2102

Sub. Code
558301

M.Sc. DEGREE EXAMINATION, NOVEMBER – 2024

Third Semester

Nutrition and Dietetics

CLINICAL AND THERAPEUTIC NUTRITION

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** the following objective type questions by choosing the correct option.

1. The process of nutrition education which involves the principle of learning by doing is ————————. (CO1, K2)
   (a) Demonstration (b) Films
   (c) Home visit (d) Recorded talks

2. Gerontological dieticians are specialized in _____ nutrition. (CO1, K2)
   (a) Sports (b) Preschool
   (c) Elderly (d) Women

3. Egg white well beaten in fruit juices is a ———————— diet. (CO2, K4)
   (a) Clear fluid (b) Full fluid
   (c) Soft (d) Regular

4. ———————— is an intermittent fever. (CO2, K4)
   (a) Tuberculosis (b) Influenza
   (c) Typhoid (d) Malaria

5. ———————— involves acute and chronic granulomatous inflammatory bowel. (CO3, K2)

(a) Gastric Ulcer (b) Crohn's disease

(c) Esophagitis (d) Dumping syndrome

6. FODMAP stands for (CO3, K2)

(a) Fermentable oligosaccharides, disaccharides, monosaccharides and polyols

(b) Fructosaccharides, oligosaccharides, disaccharides, monosaccharides and polyols

(c) Fructosaccharides, oligosaccharides, disaccharides, monosaccharides and polysaccharides

(d) Fermentable oligosaccharides, disaccharides, monosaccharides and polysaccharides

7. ———————— is the inflammation of gallbladder.(CO4, K3)

(a) Cholelithiasis (b) Cholecystitis

(c) Cirrhosis (d) Urolithiasis

8. Haematuria and proteinuria are classical symptoms of ————————. (CO4, K3)

(a) Urolithiasis

(b) Nephrosis

(c) Glomerulonephritis

(d) Gout

9. ———————— characterized by bradykinesia. (CO5, K5)

(a) Alzheimer's disease

(b) Parkinson's disease

(c) Epilepsy

(d) Trauma

10. ———————— is immune mediated food senstivity. (CO5, K5)

(a) IgE (b) Lactose intolerance

(c) Galactosemia (d) Cystic fibrosis

Part B (5 × 5 = 25)

Answer **all** questions not more than 500 words each.

11. (a) Predict the role of dietitian in hospital and community. (CO1, K2)

Or

(b) Explain the ethical principles of dietitians. (CO1, K2)

12. (a) Explain transitional feeding. (CO2, K4)

Or

(b) Interpret the dietary management recommended in H1N1. (CO2, K4)

13. (a) Summarize the role of diet in dumping syndrome. (CO3, K2)

Or

(b) Compile the importance of diet in diarrhoea. (CO3, K2)

14. (a) Simplify the role of diet in gout. (CO4, K3)

Or

(b) Write a short note on dietary regimen in cholelithiasis. (CO4, K3)

15. (a) Interpret the dietary management in neurosurgery. (CO5, K5)

Or

(b) Discuss the dietary modification emphasized for Alzheimer's disease. (CO5, K5)

Part C (5 × 8 = 40)

Answer **all** questions not more than 1000 words each.

16. (a) Summarize the types of patient assessment. State its advantages. (CO1, K2)

Or

(b) Relate psychology and food intake in humans. (CO1, K2)

17. (a) Explain the composition, monitoring and complications in enteral feeding. (CO2, K4)

Or

(b) Summarize the dietary modification for tuberculosis. Give a sample menu plan. (CO2, K4)

18. (a) Describe in detail the symptoms and dietary modifications associated with irritable bowel syndrome. (CO3, K2)

Or

(b) Describe in detail the symptoms and dietary modifications associated with gastritis. (CO3, K2)

19. (a) Outline the contributory factors and dietary modification in cirrhosis of liver. (CO4, K3)

Or

(b) Detail on the contributory factors and dietary modification in nephrosis. (CO4, K3)

20. (a) Elaborate the tests and dietary management to be followed for food allergy. (CO5, K5)

Or

(b) Discuss in detail dietary management for pre and post-operative cardiovascular conditions. (CO5, K5)

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R2103

Sub. Code
558302

M.Sc. DEGREE EXAMINATION, NOVEMBER – 2024

Third Semester

Nutrition and Dietetics

DIETETICS IN LIFESTYLE DISEASES

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** the following objective type questions by choosing the correct option.

1. Cortisol insufficiency causes ————————. (CO1, K2)

   (a) Addison's disease (b) PCOS

   (c) Cretinism (d) Acromegaly

2. ———————— behaviour is probably the most extensively studied risk factor for CHD. (CO1, K2)

   (a) Type A (b) Type B

   (c) Type C (d) Type D

3. ———————— is the characteristics of android obesity. (CO2, K3)

   (a) Gluteal adipose tissue enlarged

   (b) Excess FFA turnover

   (c) Low FFA turnover

   (d) Normal glucose transport

4. ———————— is the fullness hormone. (CO2, K3)

(a) Leptin (b) Luteinizing hormone

(c) Vasopressin (d) Ghrelin

5. ———————— occurs when blood glucose levels exceeds renal threshold which is 160 to 180mg per dl. (CO3, K4)

(a) Acidosis (b) Ketonuria

(c) Proteinuria (d) Glycosuria

6. ———————— is long acting insulin. (CO3, K4)

(a) Lente (b) NPH

(c) Glargine (d) Semilente

7. ———————— in cluster bean has hypocholesterolemic effect. (CO4, K2)

(a) Guargum (b) Beta glucan

(c) Saponin (d) Allicin

8. In moderate hypertension the diastolic pressure is ———————— mm Hg. (CO4, K2)

(a) 90 (b) 95

(c) 100 (d) 105

9. Barbecued red meat is related to risk of ————————. (CO5, K5)

(a) Non-hodgkin's lymphoma

(b) Sarcoma

(c) Leukaemia

(d) Melanoma

10. Vagotomy contributes to ————————. (CO5, K5)

(a) Mucositis (b) Gastric stasis

(c) Diabetes mellitus (d) Loss of digestive enzymes

Part B (5 × 5 = 25)

Answer **all** questions not more than 500 words each.

11. (a) Explain the effects of stress on non-vital organs. (CO1, K2)

Or

(b) Explain the effects of stress on cardiovascular system. (CO1, K2)

12. (a) Discuss the complications of obesity. (CO2, K3)

Or

(b) Interpret the causes of underweight. (CO2, K3)

13. (a) Summarize the role of diet in gestational diabetes. (CO3, K3)

Or

(b) Write a short note on artificial sweeteners. (CO3, K3)

14. (a) Brief on the stages of disease progression in atherosclerosis. (CO4, K2)

Or

(b) Write a short note on myocardial infarction. (CO4, K2)

15. (a) Write a short note on bone marrow transplantation. (CO5, K5)

Or

(b) Write a short note on cachexia. (CO5, K5)

Part C (5 × 8 = 40)

Answer **all** questions not more than 1000 words each.

16. (a) Elaborate the dietary guidelines for management of stress. (CO1, K2)

Or

(b) Detail on the psychosomatic disorders due to stress and functional adjustment. (CO1, K2)

17. (a) Explain the components of body weight and regulation of body weight. (CO2, K3)

Or

(b) Summarize the dietary management recommended for underweight. Give a sample menu plan. (CO2, K3)

18. (a) Describe in detail the symptoms and dietary modifications associated with diabetes mellitus. (CO3, K3)

Or

(b) Describe in detail the diagnosis and complications in diabetes mellitus. (CO3, K3)

19. (a) Outline the contributory factors and dietary modification in dyslipidemia. (CO4, K2)

Or

(b) Detail on the causes and dietary modification in Hypertension. Give a sample menu plan for severe hypertension. (CO4, K2)

20. (a) Elaborate the role of food in prevention of cancer. (CO5, K5)

Or

(b) Discuss in detail the therapies of cancer. (CO5, K5)

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R2104	Sub. Code
	558303

M.Sc. DEGREE EXAMINATION, NOVEMBER – 2024

Third Semester

Nutrition and Dietetics

RESEARCH METHODOLOGY AND BIOSTATISTICS

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** the following objective type questions by choosing the correct option.

1. _____ research is carried out to satisfy intellectual curiosity. (CO1, K1)
   (a) Fundamental (b) Experimental
   (c) Analytical (d) Applied

2. A rating scale (CO1, K1)
   (a) Scores an object without making comparison
   (b) Groups participants
   (c) Establishes relationships between variables
   (d) Scores an object by making comparison

3. An electron microscope gives higher magnification than an optical microscope because _____. (CO2, K2)
   (a) The wavelength of electron used is smaller compared to that of visible light
   (b) The electron microscope uses powerful lens
   (c) The velocity of electron is less than that of light
   (d) The electron have more energy than light particles

4. The physical and chemical properties of molecules are determined using _____ technique. (CO2, K2)

(a) Infrared spectrometry

(b) Nuclear Magnetic Resonance Spectroscopy

(c) Raman Spectroscopy

(d) Absorption spectrum

5. In chromatography mobile phase can be made of _____. (CO3, K6)

(a) Solid only (b) Solid or Liquid

(c) Liquid only (d) Liquid or gas

6. Electrophoresis is not used for separation of _____. (CO3, K6)

(a) Amino acids (b) Nucleic acids

(c) Proteins (d) Lipids

7. _____ techniques can be used to verify the expression of a cloned gene in bacterial host. (CO4, K4)

(a) Northern blot using a gene specific probe

(b) Restriction digestion with enzymes that do not cut within vector

(c) PCR amplification using primers specific to bacterial genomic DNA

(d) Southern blot using a vector specific probe

8. PCR based DNA amplification is an essential feature of _____ combination of molecular markers. (CO4, K4)

(a) RFLP, AFLP and SSR

(b) AFLP, SSR and RAPD

(c) RFLP, RAPD and SSR

(d) RAPD, RFLP and SSR

9. When using the chi-square test for differences in two proportions with a contingency table that has r rows and c columns, the degrees of freedom for the test statistic will be. (CO5, K2)

(a) $(r - 1)$ (b) $(r - 1)(c - 1)$

(c) $(c - 1)$ (d) $(r + 1)$

10. The most appropriate statistical test for analyzing quantitative data is _____. (CO5, K2)

(a) Chi square test (b) t-test

(c) Sign test (d) None

Part B $(5 \times 5 = 25)$

Answer **all** questions not more than 500 words each.

11. (a) Write a short note on research design. (CO1, K1)

Or

(b) Explain scaling. (CO1, K1)

12. (a) Explain the components of microscope with suitable sketch. (CO2, K2)

Or

(b) Interpret the applications of spectroscopic methods. (CO2, K2)

13. (a) Write a short note on gel filtration. (CO3, K6)

Or

(b) Compile the importance of SDS-PAGE. (CO3, K6)

14. (a) Brief on DNA fingerprinting. (CO4, K4)

Or

(b) Write a short note on plasmid isolation. (CO4, K4)

15. (a) Write a short note on corelation. (CO5, K2)

Or

(b) Discuss factor analysis. (CO5, K2)

Part C (5 × 8 = 40)

Answer **all** the questions not more than 1000 words each.

16. (a) Elaborate the types of research. (CO1, K1)

Or

(b) Detail on report writing. (CO1, K1)

17. (a) Explain the basic principles and methods of fluorescence. (CO2, K2)

Or

(b) Summarize the principles and application of infrared spectrometry. (CO2, K2)

18. (a) Describe in detail the principles and application of IEF. (CO3, K6)

Or

(b) Detail on TLC with a suitable diagram. (CO3, K6)

19. (a) Outline the types, principles and application of PCR. (CO4, K4)

Or

(b) Detail on the principles and application of RAPD. (CO4, K4)

20. (a) Elaborate the types and tools of data collection. (CO5, K2)

Or

(b) Discuss in detail application of ANOVA with suitable example. (CO5, K2)

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R2105

Sub. Code
558506

M.Sc. DEGREE EXAMINATION, NOVEMBER – 2024

Third Semester

Nutrition and Dietetics

Elective – BIOTECHNOLOGY IN FUNCTIONAL FOODS AND NUTRACEUTICALS

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** the following objective type questions by choosing the correct option.

1. Sugar is converted to alcohol through a process called _____. (CO1, K1)
   (a) Oxidation (b) Fermentation
   (c) Pasteurization (d) Canning

2. _____ is traditionally prepared using rennet from the stomach of calves. (CO1, K1)
   (a) Soups (b) Cheese
   (c) Sauce (d) Dough leavening

3. _____ is an excellent source of probiotics. (CO2, K1)
   (a) Kefir (b) Artichokes
   (c) Bananas (d) Barley

4. _____ type of starches is not digested in the small intestine. (CO2, K2)
   (a) Gelatinized starch (b) Resistant starch
   (c) RDS (d) Modified starch

5. Quinine is an alkaloid used to treat _____ disease. (CO3, K1)

(a) Diarrhea (b) Tuberculosis

(c) Malaria (d) Nerves

6. Lignans belong to the group of compounds known as _____ (CO3, K1)

(a) Terpenoids (b) Alkaloids

(c) Glucosinolates (d) Polyphenols

7. _____ coined the term nutraceutical. (CO4, K1)

(a) Stephen DeFelice

(b) Lilly and Stillwell

(c) Glenn Gibson

(d) Antoine Laurent de Lavoisier

8. The main source of lycopene content is _____. (CO4, K2)

(a) Grapes (b) Cauliflower

(c) Tomatoes (d) Onion

9. _____ spirulina used as nutraceutical supplements. (CO5, K1)

(a) Red algae (b) Green algae

(c) Blue green algae (d) Brown algae

10. Pineapple fruits yield a compound called _____ which has anti-inflammatory properties. (CO5, K1)

(a) Bromelain (b) Phytosterols

(c) Betalain (d) Terpene

Part B

($5 \times 5 = 25$)

Answer **all** questions not more than 500 words each.

11. (a) Write about the significance of enzymes in food industry. (CO1, K2)

Or

(b) Explain in detail on culture and processing methods of spirulina. (CO1, K2)

12. (a) Write about the therapeutic potential of prebiotics in human health. (CO2, K2)

Or

(b) Discuss the resistant starch and its application in food. (CO2, K2)

13. (a) How antinutrients impact the absorption of nutrients? Explain. (CO3, K3)

Or

(b) Summarize the classification natural antioxidants. (CO3, K3)

14. (a) Write the positive effects of nutraceuticals on anti-inflammatory activities. (CO4, K4)

Or

(b) Illustrate the structure, property and functions of glucosamine and lycopene. (CO4, K4)

15. (a) Describe the nutraceutical supplements from bee pollen and chlorophyll and its benefits. (CO5, K2)

Or

(b) Explain how nutraceuticals link between foods and drugs. (CO5, K2)

Part C ($5 \times 8 = 40$)

Answer **all** the questions not more than 1000 words each.

16. (a) Elaborate any two types of industrial fermentation process in fermentation technology. (CO1, K2)

Or

(b) How can food quality be enhanced by biotechnology? Justify. (CO1, K2)

17. (a) Describe the classification of functional foods and its effects on human health. (CO2, K3)

Or

(b) Discuss the taxonomy and important features of probiotic microorganisms in human health. (CO2, K3)

18. (a) Discuss the various types of phenolic compounds and its effect on human health. (CO3, K6)

Or

(b) Explain the nutritive value of spices and condiments and its uses in cooking. (CO3, K6)

19. (a) Explain about the sources of nutraceuticals in plant constituents. (CO4, K4)

Or

(b) How nutraceuticals are influenced with genes? Justify. (CO4, K4)

20. (a) Elucidate the functional components present in fruits and vegetables and its benefits. (CO5, K2)

Or

(b) Describe the nutraceuticals recommended for treating arthritis and bone-related problems. (CO5, K2)

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