

R3687

Sub. Code

558301

M.Sc. DEGREE EXAMINATION, NOVEMBER – 2025

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. Which of the following is not a purpose of nutrition education? (CO1, K2)
 - (a) Educate on nutritional needs
 - (b) Improve health status
 - (c) Promote myths
 - (d) Educate on food choices
2. In _____ method a mass of people are simultaneously educated. (CO1, K2)
 - (a) Symposium
 - (b) Home visit
 - (c) Letter
 - (d) interview
3. Rice gruel is a _____ diet. (CO2, K4)
 - (a) Clear fluid
 - (b) Full fluid
 - (c) Soft
 - (d) Regular
4. _____ is a chronic fever. (CO2, K4)
 - (a) Tuberculosis
 - (b) Influenza
 - (c) Typhoid
 - (d) Malaria

5. The loss of normal regulation of gastric emptying, gastrointestinal and systemic response to a meal is_____ (CO3, K2)
- (a) Gastric Ulcer (b) Duodenal Ulcer
(c) Esophagitis (d) Dumping syndrome
6. _____is an inherited, immune mediated intolerance to gluten foods. (CO3, K2)
- (a) IBD (b) IBS
(c) Celiac disease (d) Colitis
7. _____ diet is recommended for calcium phosphate stone. (CO4, K3)
- (a) Acid ash (b) Alkaline ash
(c) Low oxalate (d) High oxalate
8. Destruction of liver cell due to necrosis is a characteristic of _____. (CO4, K3)
- (a) Cholelithiasis (b) Cholecystitis
(c) Cirrhosis (d) Urolithiasis
9. In _____test a small quantity of suspected allergic food is given in disguised form. (CO5, K5)
- (a) Elimination (b) Provocative
(c) Skin (d) Basophil histamine release
10. ERAS denotes _____. (CO5, K5)
- (a) Enhanced Recovery After Surgery
(b) Enhanced Remedy After Surgery
(c) Enhanced Recovery After Sepsis
(d) Enhanced Remedy After Sepsis

Part B

(5 × 5 = 25)

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

11. (a) Write a short note on the problems of feeding the children. (CO1, K2)

Or

- (b) Explain the role of diet clinics. (CO1, K2)

12. (a) Explain the routine hospital diet. (CO2, K4)

Or

- (b) Interpret the dietary strategies endorsed to overcome chikungunya. (CO2, K4)

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

Or

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

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

Or

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

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

Or

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

Part C

(5 × 8 = 40)

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

16. (a) Elaborate the methods of nutrition education. (CO1, K2)
- Or
- (b) Explain the types of dietitians and their responsibilities. (CO1, K2)
17. (a) Explain the composition, monitoring and complications in parenteral feeding. (CO2, K4)
- Or
- (b) Summarize the dietary modification for typhoid. Give a sample menu plan. (CO2, K4)
18. (a) Describe in detail the symptoms and dietary modifications associated with irritable bowel disease. (CO3, K2)
- Or
- (b) Describe in detail the symptoms and dietary modifications associated with gastric surgery. (CO3, K2)
19. (a) Outline the contributory factors and dietary modification in glomerulonephritis. (CO4, K3)
- Or
- (b) Detail on the contributory factors and dietary modification in urolithiasis. (CO4, K3)
20. (a) Elaborate the types and principles of planning diet for food allergy. (CO5, K5)
- Or
- (b) Discuss in detail dietary management during metabolic stress. (CO5, K5)

R3688

Sub. Code

558302

M.Sc. DEGREE EXAMINATION, NOVEMBER – 2025

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. _____ is the primary stress hormone. (CO1, K2)
(a) Cortisol (b) Oxytocin
(c) TSH (d) FSH

2. _____ part of the brain is responsible for the stress response. (CO1, K2)
(a) Hippocampus (b) Hypothalamus
(c) Cerebrum (d) Cerebellum

3. _____ is the characteristics of gynacoid obesity. (CO2, K3)
(a) Abdominal adipose tissue enlarged
(b) Excess FFA turnover
(c) Low FFA mobilisation
(d) Decreased glucose transport

4. _____ is the hormone that sends hunger signals to the brain. (CO2, K3)
- (a) Leptin (b) Luteinizing hormone
(c) Vasopressin (d) Ghrelin
5. _____ is a low calorie sweetner. (CO3, K3)
- (a) Polyols (b) Sucrolose
(c) Saccharin (d) Aspartame
6. _____ an alkaloid in fenugreek seed reduces blood glucose levels. (CO3, K3)
- (a) Trigonellin (b) Acarbose
(c) Caffeine (d) Tryptamine
7. _____ is essential for production of glutathione peroxidase (CO4, K2)
- (a) Zinc (b) Selenium
(c) Copper (d) Chromium
8. The diastolic pressure is 108 mm Hg in _____ hypertension. (CO4, K2)
- (a) Normal (b) Mild
(c) Moderate (d) Severe
9. The tissue or cell of origin in fibrosarcoma is _____. (CO5, K5)
- (a) Ectoderm (b) Endoderm
(c) Mesoderm (d) WBC
10. Cachexia is also called _____. (CO5, K5)
- (a) Wasting syndrome (b) Down syndrome
(c) Ehlers-Danlos (d) Triple X syndrome

Part B

(5 × 5 = 25)

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

11. (a) Write a short note on functional adjustment. (CO1, K2)

Or

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

12. (a) Explain the types of causes of obesity. (CO2, K3)

Or

- (b) Interpret the complications of underweight. (CO2, K3)

13. (a) Relate diet and insulin. (CO3, K3)

Or

- (b) Write a short note on diabetes insipidus. (CO3, K3)

14. (a) Simplify the role of diet in angina pectoris. (CO4, K2)

Or

- (b) Write a short note on complications of hypertension. (CO4, K2)

15. (a) Interpret the etiology and dietary management in hyperkinetic behavior syndrome. (CO5, K5)

Or

- (b) Discuss the stage in cancer development. (CO5, K5)

Part C

(5 × 8 = 40)

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

16. (a) Summarize the effect of stress on vital organs. (CO1, K2)

Or

- (b) Relate the impact of foods and nutrients on stress. (CO1, K2)

17. (a) Explain the surgical management and lifestyle modification techniques for weight reduction. (CO2, K3)

Or

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

18. (a) Describe in detail the symptoms and dietary modification in gestational diabetes. (CO3, K3)

Or

- (b) Describe in detail the parameters associated with management of diabetes mellitus. (CO3, K3)

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

Or

- (b) Classify and detail on the contributory factors and dietary modification in hypertension. (CO4, K2)

20. (a) Elaborate the risk factors of cancer. (CO5, K5)

Or

- (b) Discuss in detail the nutritional problems of cancer therapy. (CO5, K5)

R3689

Sub. Code

558303

M.Sc. DEGREE EXAMINATION, NOVEMBER – 2025

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. All forms of ranking scales results in _____ data. (CO1, K1)
(a) Nominal (b) Ordinal
(c) Absolute (d) Interval
2. A hypothesis which develops while planning the research is _____. (CO1, K1)
(a) Null Hypothesis
(b) Relational Hypothesis
(c) Working Hypothesis
(d) Descriptive Hypothesis
3. Fluorescence microscope that requires photoactivatable probes to obtain super-resolution is _____. (CO2, K2)
(a) Structured illumination microscope
(b) dSTORM-Stochastic optical reconstruction microscopy
(c) STED
(d) Laser scanning confocal microscope

4. Select the correct statement from the following options. (CO2, K2)
- (a) Spectroscopic methods require less time and more amount of sample than classical methods
 - (b) Spectroscopic methods require more time and more amount of sample than classical methods
 - (c) Spectroscopic methods require less time and less amount of sample than classical methods
 - (d) Spectroscopic methods require more time and less amount of sample than classical methods
5. _____ chromatography involves the separation of substances in a mixture over a 0.2 mm thick layer of an adsorbent. (CO3, K6)
- (a) Thin layer
 - (b) Gas
 - (c) Column
 - (d) Paper
6. Agarose can be extracted from _____. (CO3, K6)
- (a) *Lycopersicon esculentum*
 - (b) *Ficus benghalensis*
 - (c) *Gracilaria esculentus*
 - (d) *Agrostis stolonifera*
7. The inverse PCR method involves a series of restriction digests and ligation resulting in _____. (CO4, K4)
- (a) Short products
 - (b) Long products
 - (c) Loop fragments
 - (d) Primer formation
8. A Single Nucleotide Polymorphism is a _____. (CO4, K4)
- (a) DNA sequence variation
 - (b) RNA sequence variation
 - (c) Nucleic acid sequence variation
 - (d) (b) and (c)

9. A measure of actual divergence of the observed and expected frequencies is —————. (CO5, K2)
- (a) T-test (b) Chi-square test
(c) U test (d) Rank co-relation
10. The Student's t- test is a —————. (CO5, K2)
- (a) Parametric test
(b) Non-parametric test
(c) Test for comparing mode
(d) Test for comparing variance

Part B (5 × 5 = 25)

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

11. (a) Write a short note on data collection. (CO1, K1)
- Or
- (b) Define research. List the objectives of research. (CO, K1)
12. (a) Write a short note on confocal microscopy. (CO2 K2)
- Or
- (b) Write a short note on molecular mass spectroscopy. (CO2, K2)
13. (a) Brief on PAGE. (CO3, K6)
- Or
- (b) Compile the importance of ion exchange chromatography. (CO3, K6)
14. (a) Simplify the role of UV spectrometry in DNA checking. (CO4, K4)
- Or
- (b) Write a short note on AFLP. (CO4, K4)

15. (a) Write a short note on regression. (CO5, K2)
- Or
- (b) Discuss the principles of statistical methods in biological research. (CO5, K2)

Part C (5 × 8 = 40)

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

16. (a) Summarize the steps in research process. (CO1, K1)
- Or
- (b) Detail on research design with suitable example. (CO1, K1)
17. (a) Outline the principles and applications of Scanning electron microscope. (CO2 K2)
- Or
- (b) Outline the principles and applications of Nuclear magnetic resonance. (CO2, K2)
18. (a) Describe in detail the principle and applications of HPLC. (CO3 K6)
- Or
- (b) Detail on 2D electrophoresis. (CO3, K6)
19. (a) Outline the principles and applications of DNA sequencing. (CO4, K4)
- Or
- (b) Detail on the blotting techniques. (CO4, K4)
20. (a) Elaborate the DUNCAN's multiple test with suitable example. (CO5, K2)
- Or
- (b) Discuss the types of students t-test and their application in detail. (CO5, K2)

R3690

Sub. Code

558506

M.Sc. DEGREE EXAMINATION, NOVEMBER – 2025

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 question by choosing the correct option.

1. _____ enzyme is responsible for converting pectin into pectic acid in over ripe fruits. (CO1, K1)
 - (a) Pectic methyl esterase
 - (b) Polygalacturonase
 - (c) Amylase
 - (d) Cellulase
2. Single cell protein has _____ levels of protein content. (CO1, K1)
 - (a) Normal
 - (b) Moderate
 - (c) High
 - (d) Low
3. _____ is the primary source of prebiotics. (CO2, K2)
 - (a) Nuts and oilseeds
 - (b) Animal foods
 - (c) Fruits and vegetables
 - (d) Milk products

4. _____ contains live bacteria called Probiotics. (CO2, K2)
- (a) Fruits (b) Whole grains
(c) Artichokes (d) Yoghurt
5. Catechin and epicatechin comes under _____ compounds. (CO3, K1)
- (a) Flavanols (b) Anthocyanidins
(c) Alkaloids (d) Glucosinolates
6. _____ is the antinutrient present in spinach. (CO3, K1)
- (a) Phytic acid (b) Oxalic acid
(c) Tannin (d) Hemagglutinin
7. _____ phytochemicals of the terpenes present in citrus fruit. (CO4, K1)
- (a) Limonoids (b) Anthocyanin
(c) Betalains (d) Lycopene
8. The hormone melatonin is secreted by _____ gland. (CO4, K1)
- (a) Adrenal (b) Pituitary
(c) Pineal (d) Thyroid
9. _____ is a green pigment found in plants. (CO5, K2)
- (a) Betalains (b) Anthocyanins
(c) Carotenoids (d) Chlorophyll
10. Hydroxycitric Acid, a component in Garcinia Cambogia, has been used to promote _____. (CO5, K1)
- (a) Weight gain (b) Weight loss
(c) Induce joint pain (d) Increases food intake

Part B

(5 × 5 = 25)

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

11. (a) Give a short note on bioprocess control in fermentation technology. (CO1, K3)

Or

- (b) Discuss the role of single cell protein in microbial production. (CO1, K3)

12. (a) Explain the history and importance of functional foods in human health. (CO2, K2)

Or

- (b) Write about the sources and therapeutic potential of prebiotics. (CO2, K2)

13. (a) Summarize the sources, bioavailability and functions of alkaloids and terpenoids. (CO3, K2)

Or

- (b) Briefly explain the significance of conjugated linoleic acid and n-3 fatty acids on human health. (CO3, K2)

14. (a) Discuss the historical perspective of nutraceuticals. (CO4, K4)

Or

- (b) Describe the structure, property and therapeutic uses of any two nutraceuticals. (CO4, K4)

15. (a) Write the health effects of mushroom extract and spirulina in nutraceutical supplements. (CO5, K3)

Or

- (b) Write about the nutraceuticals derived from medicinal plants that are used to treat anti-aging issues. (CO5, K3)

Part C

(5 × 8 = 40)

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

16. (a) Explain in detail about the synthesis, process and applications of enzymes in food industries. (CO1, K6)

Or

- (b) Describe the application of biosensor and biochips in food biotechnology. (CO1, K6)

17. (a) Briefly describe the non-digestible carbohydrates. (CO2, K4)

Or

- (b) Elaborate the quality assurance of probiotics and its safety concerns. (CO2, K4)

18. (a) Elaborate the antinutrients present in foods and its effects. (CO3, K3)

Or

- (b) Explain the natural antioxidants and why it is important in human health? (CO3, K3)

19. (a) Elucidate the classification of nutraceuticals based on the food sources and mechanism of action. (CO4, K4)

Or

- (b) Write about the potential of nutraceuticals in hypertension and cardiovascular diseases. (CO4, K4)

20. (a) Describe the relationship between nutraceuticals, foods and medicine. (CO5, K5)

Or

- (b) Explain in detail about the nutraceutical remedies for nephrological and neurological disorders. (CO5, K5)