45868

BRAINWARE UNIVERSITY

Term End Examination 2025-2026
Programme – M.Sc.(ND)-2025
Course Name – Advanced Nutrition Studies
Course Code - MND20503
(Semester II)

Full Marks : 60 **Time : 2:30 Hours**

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A

(Multiple Choice Type Question) 1 x 15=15

1. *Choose the correct alternative from the following :*

(i) Why does resting energy expenditure increase in burn patients?
a) Reduced blood flow b) Increased stress hormone activity
c) Low oxygen supply d) Decreased muscle mass

(ii) What does a negative nitrogen balance indicate?
a) Muscle gain b) Fat accumulation
c) Protein breakdown d) Adequate nutrition

(iii) Why are energy and protein needs increased in inflammatory states?
a) Reduced digestion b) Increased fat storage
c) Reduced metabolism d) Increased tissue repair and immune activity

(iv) What is the main function of glutamine in critically ill patients?
a) Fat storage b) Energy for brain
c) Fuel for immune and gut cells d) Bone growth

(v) Which vitamin supports epithelial integrity and wound healing?
a) Vitamin D b) Vitamin A
c) Vitamin K d) Vitamin B12

(vi) Which trace element acts as an antioxidant enzyme cofactor?
a) Selenium b) Copper
c) Iron d) Iodine

(vii) Why are antioxidants important in trauma?
a) To reduce oxidative stress b) To increase appetite
c) To increase metabolism d) To increase fat absorption

(viii) Which fatty acid has anti-inflammatory properties?
a) Omega-3 b) Omega-6
c) Saturated fat d) Trans fat

(ix) Why are trace elements important in sepsis?

a) They provide energy
b) They support immune and antioxidant systems
c) They increase fat
d) They reduce protein needs

(x) What is the main aim of immunonutrition in trauma patients?

a) Increase body weight
b) Improve immune response and recovery
c) Increase fat stores
d) Reduce appetite

(xi) Recognize the main aim of emergency feeding programmes.

a) Improve dietary diversity
b) Prevent mortality and severe malnutrition
c) Promote local agriculture
d) Encourage food storage

(xii) Recall the full form of RUTF.

a) Ready-to-Use Therapeutic Food
b) Rapid-Use Therapeutic Formula
c) Ready-to-Use Targeted Feed
d) Rapid Utility Treatment Food

(xiii) Recognize the rapid field indicator commonly used to detect acute malnutrition.

a) BMI
b) Skinfold thickness
c) Waist circumference
d) Mid-upper arm circumference

(xiv) Recall the hormone that promotes gluconeogenesis during starvation.

a) Insulin
b) Thyroxine
c) Glucagon
d) Estrogen

(xv) Recognize the key biochemical hallmark of prolonged starvation.

a) Hyperglycemia
b) Ketosis
c) Hyperinsulinemia
d) Increased glycogen stores

Group-B

(Short Answer Type Questions) 3 x 5=15

2. Recall the principal routes of nutrient loss in patients with extensive burns. (3)
3. Explain the pathophysiological basis of persistent negative nitrogen balance in critically ill trauma patients. (3)
4. Explain the effect of hypoxia on energy metabolism at high altitude. (3)
5. Evaluate the challenges of implementing nutrition interventions during pandemics. (3)
6. Propose a long-term nutritional rehabilitation plan following recovery from prolonged starvation. (3)

OR

Create a framework to evaluate recovery during nutritional rehabilitation in malnourished patients. (3)

Group-C

(Long Answer Type Questions) 5 x 6=30

7. Identify the major immunonutrients used in the nutritional management of trauma and critically ill patients and state their primary functions. (5)
8. Interpret the rationale for the use of immunonutrition in critically ill patients, with reference to arginine, glutamine, and omega-3 fatty acids. (5)
9. Analyze the interrelationship between psychological stress, appetite regulation, and nutritional status in microgravity conditions. (5)
10. Analyze the role of ready-to-use foods in shifting emergency nutrition care from facility-based to community-based models. (5)
11. Evaluate the sustainability of using imported therapeutic foods versus locally produced alternatives in humanitarian settings. (5)
12. Develop a structured rehabilitation protocol differentiating between SAM and MAM. (5)

OR

Formulate a long-term nutritional rehabilitation strategy following recovery from prolonged starvation. (5)