

KATHMANDU UNIVERSITY
End Semester Examination
July, 2018

Mark scored:

Level : B. Tech.
Year : IV

Course : BIOT 417
Semester: II

Exam Roll No. :

Time: 30 mins.

F. M. : 20

Registration No.:

Date **JUL 22 2018**

SECTION "A"

[20 Q × 0.75 = 15 marks]

Tick the correct answer.

1. The concept of functional foods was born in
[a] Japan [b] Korea [c] USA [d] China
2. Functional foods
[a] Are rich sources of phytochemicals; however, these foods may also be good sources of many vitamins, but not always (e.g. red wine).
[b] Provide health benefits similar to those supplied by the traditional nutrients.
[c] Are only available from animal food sources.
[d] Are only available from plant food sources.
3. "Enriched" grains do NOT contain any of the following as added back substances
[a] Fiber [b] Niacin [c] Iron [d] Thiamin
4. Peppermint (*Mentha piperita*) contain
[a] Fiber [b] Menthol [c] Iron [d] Thiamin
5. If a product is said to be "Sugar Free" it should contain sugar.
[a] No [b] Less than 0.5 grams of sugar per serving
[c] No more than 40 kcal per serving [d] Less than 10 grams
6. Antioxidants can protect unsaturated fats from
[a] Lipid reduction [b] Lipid oxidation
[c] Lipid per reduction [d] Lipid peroxidation
7. What is the best way to prepare vegetables to retain the most antioxidant activity?
[a] Serve raw [b] Steam lightly [c] Boil [d] Microwave
8. Which drink bestows the most heart-healthy antioxidant power?
[a] Red wine [b] Green tea
[c] Pomegranate juice [d] Cranberry juice
9. Which of the following drinks has the highest antioxidant activity?
[a] Black tea (no milk or sugar) [b] Orange juice
[c] Milk [d] Red wine
10. Which of the following will cause the most free radical accumulation in your body?
[a] Spending four hours in a smoke-laden bar
[b] Drinking beers
[c] Listening to an hour-long lecture from your boss
[d] All of the above are approximately equal

11. A free radical is
 - [a] A cell that promotes health throughout the body.
 - [b] A naturally or artificially occurring substance that causes disease if left unchecked.
 - [c] A vitamin that is distributed at no charge at health food stores and natural-medicine clinics.
 - [d] A nutrient that works to correct any imbalance in your body.
12. Which of the following belongs to Carotenes
 - [a] Beta-cryptoxanthin
 - [b] Lutein
 - [c] Zeaxanthin
 - [d] Lycopene
13. Which of these is NOT considered a nutrient?
 - [a] Vitamins
 - [b] Minerals
 - [c] Fiber
 - [d] Fats
14. The term 'nutraceutical' was coined from 'nutrition' and 'pharmaceutical' in
 - [a] 1989
 - [b] 1898
 - [c] 2002
 - [d] 1789
15. Probiotic Microorganism is
 - [a] Oligofructose
 - [b] Inulin
 - [c] *Bacillus bulgaricus*
 - [d] Pyrodextrins
16. Lycopene is a highly unsaturated hydrocarbon containing
 - [a] 10 conjugated and 2 unconjugated double bonds.
 - [b] 11 conjugated and 1 unconjugated double bonds.
 - [c] 11 conjugated and 2 unconjugated double bonds.
 - [d] 2 conjugated and 2 unconjugated double bonds.
17. The major omega-3-fatty acid is
 - [a] β -carotene
 - [b] α -linolenic acid (ALA)
 - [c] Zeaxanthin
 - [d] Thiamin
18. Source of Quercetin is
 - [a] Green tea
 - [b] Meats
 - [c] Walnuts
 - [d] Sea foods
19. Free radical is
 - [a] Superoxide dismutase (SOD)
 - [b] Catalase
 - [c] β -carotene
 - [d] O_2^-
20. Non-traditional nutraceuticals is related to
 - [a] Recombinant nutraceuticals
 - [b] Catalase
 - [c] β -carotene
 - [d] Phytochemicals

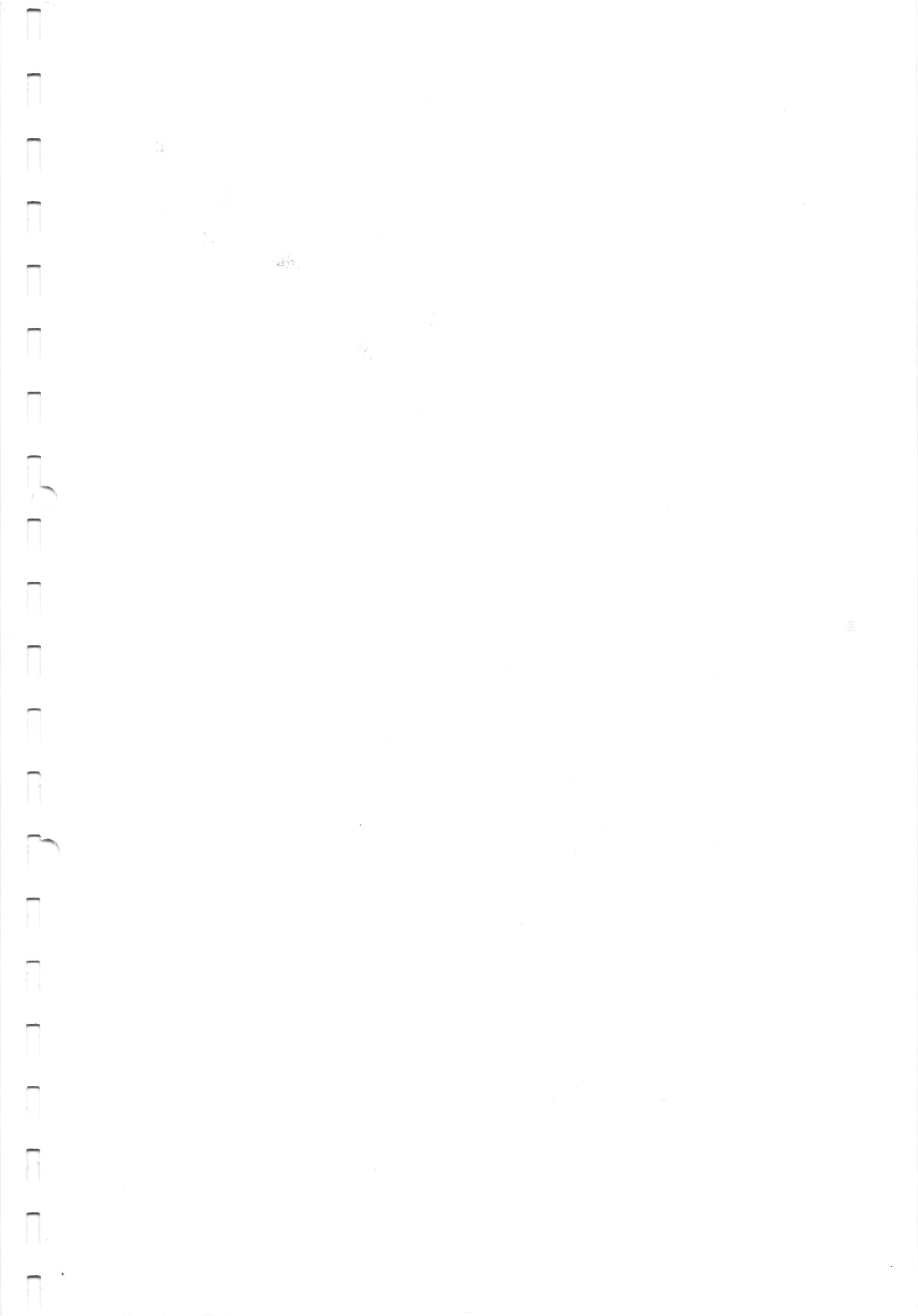
SECTION "B"

[10 × 0.5= 5 marks]

Fill in the blanks.

21. Father of modern medicine
22. The term 'nutraceutical' was coined from 'nutrition' and 'pharmaceutical' by

23. LDL stands for
24. The example of medical food is.. ..
25. Fortification is a process
26. is a compound that is very abundant in tomatoes.
27. Solid dosage forms of herbal formation are
28. Dietary supplements is
29. Traditional nutraceuticals are.....
30. Carotenoids (Isoprenoids) found in.....



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SECTION "C"

[11 Q × 5 = 55 marks]

Attempt *ANY ELEVEN* questions. Give short and relevant answers.

1. What is functional food? Describe types of functional food with proper examples.
2. Define nutraceutical and its health benefits.
3. Write any one nutraceutical with its mechanism against diabetes, obesity, cancer, cholesterol.
4. What are prebiotics and probiotics with examples?
5. What are free radicals and types of free radicals and sources of free radicals?
6. What is antioxidant? Classification of antioxidant.
7. What are the herbal products? Write any five herbal products with function.
8. What Are Fortified Foods? Why Eggs fortified with omega-3 fatty acids is important.
9. What is Carotenoids? Describe the types of Carotenoids.
10. Describe the mechanism of lycopene.
11. What are the major issues of preparing nutraceutical?
12. What is lycopene? Write biological functions of lycopene.
13. Short notes on
 - a) history of nutraceutical
 - b) herbal formulation.

