2013

M.Sc.

3rd Semester Examination

NUTRITION AND DIETETICS

PAPER—NUD-304

Full Marks : 40

Time : 2 Hours

The figures in the right-hand margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

Module — I

(Food Toxicology)

(Marks : 20)

1. Answer any *five* questions of the following : 5×1

(a) Write the full name of a Organochlorine pesticide.

(b) Write the full name of LOEL.

(c) Write the name of a mutagen that is produced during cooking under heat.

(d) What is xenobiotic ?

(e) What is ciguatera poisoning ?

(f) What is MSG ?

(g) Where maltodextrin is used as preservatives ?

(h) What is the use of lucifervin in agricultural biotechnology ?

2. (a) In mathematical terms 1 + 5 = 10, give your logic behind this term from the angle of toxicological effect of a food toxin.

   (b) TD_{50} of a food toxing is 900 mg/kg body weight and the ED_{50} 2.0 mg/kg body weight. Calculate LD_{50} value of this good toxin.

   (c) What is the difference between subchronic and chronic toxicity?

   (d) "Two food toxins having same LD_{50} but different threshold levels" — explain the statement graphically. 2+2+2+2

Or

   (a) Give an example of a phytoplankton and a crustacea responsible for ASP and PSP respectively.

   (b) Write the causes of DSP poisoning in brief, with its symptoms.

   (c) Describe the mechanism of action of aflatoxin B1 to ptomote cancer formation. 1+2+5

3. (a) Mention few examples of teratogenic agents related to food.

   (b) Describe briefly the reproductive toxicity developed due to arsenic poisoning.

   (c) Describe the mechanism of developing neurological disorders due to the frequent use of *malathion* types of insecticides in agricultural field.

$1\frac{1}{2}+2\frac{1}{2}+3$

Or

Write short notes on :

(a) Advantages of developing GM food over selective breading.

(b) Transgenic Rice and tomatoes.

(c) Frost resistant crop. 2+3+2

Module — II

(Food Microbiology)

(Marks : 20)

4. Answer any *five* questions of the following: 5×1

(a) Give the fill form of MPN test.

(b) Write the name of fermented food prepared from meat.

(c) What is the use of BSC cabinet in food microbiology ?

(d) What is colony counter ?

(e) What is photolithotropic bacteria ?

(f) Give the formula of microbial growth rate.

(g) What is enrichment media ?

(h) Write the name of any type of yeast species.

5. (a) How do you classify microbes according to risk factors responsible for causing disease ?

(b) Briefly describe different phases of bacterial growth curve. 3+5

Or

(a) What is the purpose of MPN test?

(b) How do you perform the test?

(c) Mention the different preservation techniques to maintain the bacterial strain. 1+4+3

6. (a) Write the name of two molds.

(b) State the merits and demerits of traditional and controlled fermentation.

(c) Diagrammetically represent 'backstop' method of controlled fermentation. 1+3+3

Or

Write short notes on :

(a) Nutrient composition of idli.

(b) Preference of real-time PCR (qPCR) over RT-PCR.

(c) Differential media in microbiology.

$2\frac{1}{2}+2+2\frac{1}{2}$

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