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PG CBCS

M.Sc. Semester-III Examination, 2020

FOOD SCIENCE & NUTRITION

PAPER: FSN 301

FUNCTIONAL FOODS, NUTRACEUTICALS, FOOD NANOTECHNOLOGY & FOODOMICS

Full Marks: 40 **Time: 2 Hours**

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1. Answer any <u>four</u> questions: (250 Words) **10X4=40**

(a) (i) What do you mean by carcinogens and mutagens? 2+4+4

(ii) Write the different stages of cancer.

(iii) What are the genetical basis of cancer?

(b) (i) What do you mean by metabolomics? 2+6+2

(ii) Briefly discuss about mode of action of aflatoxin M1 and M2 for toxicity.

(iii) What is genome?

(c) (i) Define food nanotechnology. 2+6+2

(ii) Write down the basic application of food nanotechnology in food industry.

(iii) What are the safety concerns to be taken in food nanotechnology.

(d) (i) What do you mean by nutrigenomics?

(ii) Explain the role of Zinc and selenium for gene expression.

(e) Define prebiotics with example. Classify different types of prebiotics. State the health beneficial effects of prebiotics. 2+3+5

(f) Define probiotics. What are the selection criteria of a probiotic bacterium? How do probiotic bacteria lower down cholesterol?

(g) What do you mean by phytochemicals? Classify phytochemicals. What are the different sources of flavonoid? 2+6+2

(h) Why low glycemic index foods are included in the diet of a PCOS patient? Write the complications of PCOS. 4+6

(i) What are phytoestrogens? Give example. Write the role of phytoestrogen on osteoporosis and reproductive disorders. What are xenoestrogen? 3+6+1

(j) How curcumin is metabolized in our body? Discuss about the antioxidative and anti-inflammatory properties of curcumin. 2+5+3

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