UG/5th Sem (H)/22/(CBCS)

2022

FOOD AND NUTRITION (Honours)

Paper Code : FNTH DC-11

(Food Microbiology)

Full Marks : 25 Time : Two Hours

The figures in the margin indicate full marks.
Candidates are required to give their answers in their own words as far as practicable.

1. Answer any *five* questions from following : 1×5=5

   (a) Name the principal microorganism present in yogurt.

   (b) What is aflatoxin?

   (c) Mention the name of any two bacteria involved in fermentation process.

   (d) What do you mean by pasteurization?

   (e) Write the name of any two food preservative.

   (f) What do you mean by disinfectant? Give an example.

   (g) Write the name of solidifying agent used in media preparation.

   (h) Write the principle of autoclave.

P.T.O.

2. Answer any *two* questions from the following : 5×2=10

(a) Append a comperative note between pure culture and sub culture.

(b) Write a short note on different phases of bacterial growth with suitable diagram.

(c) What is meant by staphylococcal food poisoning? Write down its mode of transmission and symptoms. 1+2+2=5

(d) How is the purity of culture assessed? Explain.

3. Answer any *one* question from the following : 10×1=10

(a) What is sterilization? State the advantages and limitations of moist heat-based sterilization. Write down briefly about chemical methods used in disinfection. 2+4+4=10

(b) What is culture media? Discuss different types of culture media according to their physical state with examples. Write down the advantages of selective and differential media separately. 2+5+3=10

2022

FOOD AND NUTRITION (Honours)

Paper Code : FNTH DC-12

(Medical Microbiology)

Full Marks : 25 Time : Two Hours

The figures in the margin indicate full marks.
Candidates are required to give their answers in their own words as far as practicable.

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

(a) What is virulence?

(b) Which is the agent caused most frequent nosocomial infections?

(c) Name one gram negative and one gram positive bacteria.

(d) Define plasmid.

(e) Write any two symptoms of typhoid.

(f) Mention the full form of AIDS.

(g) Write an important function of bacterial capsule.

(h) Give the name of causative agent of tuberculosis.

2. Answer any *two* questions from the following : 5×2=10

(a) Write advantages and disadvantages of a resident flora in human body.

(b) Why antibiotic sensitivity test is needed? What do you mean by susceptibility in the basis of this test? 4+1=5

(c) How *Helicobacter pylori* caused ulcer? What are the main complications noted in ulcer? 3+2=5

(d) What is lysogeny? Describe lysogeny of lambda phage. 1+4=5

3. Answer any *one* question from the following : 10×1=10

(a) Briefly describe the structure of capsule. Differentiate between bacteriostatic and bactericidal agent. How gram-positive bacteria cell wall is differed from gram-negative bacterial cell wall? Explain. 3+3+4=10

(b) What do you mean by antibiotic? Briefly describe the mode of action of nucleic acid synthesis inhibiting antibiotic with an example. 2+8=10

2022

FOOD AND NUTRITION (Honours)

Paper Code : FNTH DSE-1

Full Marks : 25 Time : Two Hours

The figures in the margin indicate full marks.
Candidates are required to give their answers in their own words as far as practicable.

DSE - 1(A) : Human Pathology

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

   (a) Give an example of hypertrophy.

   (b) What do you mean by embolus?

   (c) What is neoplasm?

   (d) Mention the principal function of LDH.

   (e) What is haematuria?

   (f) Why p53 called as cancer regulator gene?

   (g) What does the term 'reactive hyperemia' mean?

   (h) Write diagnostic significance of amylase.

2. Answer any *two* questions from the following : 5×2=10

   (a) Is thrombus and thrombosis being same? Justify your answer. What is Embolism? 3+2=5

P.T.O.

(b) Write down the difference between necrosis and apoptosis.

(c) Briefly describe the homeostasis control mechanism.

(d) Briefly discuss the functions of creatine kinase and mention its clinical significance. 4+1=5

3. Answer any *one* question from the following : 10×1=10

(a) Briefly discuss the microscopical characteristics of casts and crystals in reference to urine pathology. 5+5=10

(b) What are the key indicators of malignancy? How normal cell transform into cancer cell? Write a brief note on staging of cancer. 2+3+5=10

DSE - 1(B) : Therapeutic Nutrition and Critical Care

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

   (a) Name the causative agent of Cholera.

   (b) What is Lupas arthritomatosis?

   (c) Write down the full form of ICU and NICU.

   (d) State the composition of ORS.

   (e) Mention the name of stages of burns.

   (f) Point out any two causes of trauma.

   (g) Which organ is affected first in sepsis?

   (h) Write any two symptoms of osteoarthritis.

2. Answer any *two* questions from the following : 5×2=10

   (a) Briefly describe the stages involved in critical care of sepsis patient.

   (b) What role does diet play in pre and post operative care of patient?

   (c) Write down the pathophysiology of diarrhea. What are the causes of chronic diarrhea? 3+2=5

   (d) Define infection. Discuss the physiological complications occur during an infection. 1+4=5

P.T.O.

3. Answer any *one* question from the following : 10×1=10

(a) Describe the dietary management of a patient suffering from typhoid fever. Write down the symptoms of typhoid fever. 7+3=10

(b) Write down the clinical features of Cholera. Give the dietary principle of an adult cholera patient. How environmental factors affect cholera? 5+3+2=10

DSE - 2(B) : Biophysics and Bioinstrumentation

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

   (a) Mention the range of web length of visible light.

   (b) What is wave number?

   (c) Write down an application of gaschromatography.

   (d) State the basic difference between mobile phase and stationary phase of chromatography.

   (e) What is bed volume in column chromatography?

   (f) Define Svedberg unit.

   (g) Write an application of high performance liquid chromatography.

   (h) What is RF value related with chromatography?

2. Answer any *two* questions from the following : 5×2=10

   (a) Write down the principle of gas chromatography. State its applications. 3+2=5

   (b) Briefly describe the role of florescent probe in the study of protein and nucleic acid.

   (c) What is gradient centrifugation? How is it difference from differential centrifugation? 2+3=5

   (d) State Beer-Lambert law. How is the Beer-Lambert law used in spectroscopy? 2+3=5

P.T.O.

3. Answer any *one* question from the following : 10×1=10

(a) Write down the basic principle of flow cytometry. What are the applications of it? What do you mean by static and dynamic quenching in reference to florescence spectroscopy? 2+4+4=10

(b) Write down the principle of paper chromatography. How do you identify an amino acid by this method? Explain. 2+8=10

2022

FOOD AND NUTRITION (Honours)

Paper Code : FNTH DSE-2

(Molecular Biology)

Full Marks : 25 Time : Two Hours

The figures in the margin indicate full marks.
Candidates are required to give their answers in their own words as far as practicable.

DSE - 2(A) : Molecular Biology

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

(a) What is codon?

(b) Differentiate between nucleoside and nucleotide.

(c) What is translation?

(d) What do you mean by splicing?

(e) Write the common point of similarities between DNA and RNA.

(f) What is Okazaki fragment?

(g) Distinguish between lagging and leading strands of DNA.

(h) Mention the objective of gene mapping.

P.T.O.

2. Answer any *two* questions from the following : 5×2=10

(a) Briefly discuss the application of recombinant DNA.

(b) Write down the role of major any two enzymes in DNA replication.

(c) "DNA acts as genetic material" — Explain the statement.

(d) What is proteomics? Write its application in modern research. 1+4=5

3. Answer any *one* question from the following : 10×1=10

(a) Briefly describe the types of RNA with suitable diagram. Meselson and Stahl how describe semi-conservative model of DNA replication? 6+4=10

(b) What do you mean by genetic code? Briefly describe the role of IF factors in prokaryotic translation. 2+8=10

UG/5th Sem (H)/22/(CBCS)

2022

FOOD AND NUTRITION (Honours)

Paper Code : FNTH SEC-1

Full Marks : 40 Time : Two Hours

The figures in the margin indicate full marks.
Candidates are required to give their answers in their own words as far as practicable.

SEC - 1A : Environment Management and Public Health

1. Answer any *five* questions from the following : 2×5=10

(a) What is meant by acid rain?

(b) Write down the cause of Minamata disease.

(c) Name the causative agents of malaria.

(d) What is asbestosis?

(e) Define vector and give example of any two vector borne disease.

(f) What do you mean by nuclear wastes?

(g) State the symptoms of fluorosis.

(h) What do you mean by Ozone hole?

P.T.O.

2. Answer any *four* questions from the following : 5×4=20

(a) What is pollution? How water pollution affects human health? Explain. 1+4=5

(b) Briefly describe the role of *Bacillus sphaericus* as bio-insecticides.

(c) Describe the fate of toxic substances in the environment.

(d) Write a brief note on 'green house effect'.

(e) What is silicosis? Write down the symptoms of silicosis. 2+3=5

(f) Write a short note on the pathogenicity of dengue.

3. Answer any *one* question from the following : 10×1=10

(a) Write the differences between sewage and sullage. Briefly discuss the sewage treatment process. 2+8=10

(b) What do you mean by environmental hazard? Write various sources of the environmental hazard. Describe the adverse effects of biomedical wastes on environment as well as on human health. 2+2+6=10

SEC - 1B : Technology of Fruits and Vegetables

1. Answer any *five* questions from the following : 2×5=10

(a) What is the purpose of canning?

(b) What are the uses of SSJ and FPJ?

(c) How is marmalade different from jam?

(d) What is mechanical dehydration?

(e) Define spoilage.

(f) Name some pigments present in fruits and vegetables.

(g) Define syrups and brines.

(h) What are the changes occur in storage of fruits and vegetables?

2. Answer any *four* questions from the following : 5×4=20

(a) What are the role of blanching and storage in fresh vegetables processing?

(b) Explain the process of making fruit juices by aeration and straining.

(c) Briefly discuss the different methods of drying.

(d) What is lacquering? Explain the steps involved in lacquering of canned foods. 2+3=5

P.T.O.

(e) What is the difference between thin cut marmalade and thick cut marmalade? Explain the process involved in making marmalades. 1+4=5

(f) How freezing and tetra-packing helps in preservation of fruit juices?

3. Answer any *one* question from the following : 10×1=10

(a) Write the differences between jam and jelly. How pectin form gels in the production of jelly? What are the problems occur in jam and jelly making? 4+3+3=10

(b) Describe the process for making pickles of any fruits with a flow chart.