বিদ্যাসাগর বিশ্ববিদ্যালয়
VIDYASAGAR UNIVERSITY

Question Paper

B.Sc. Honours Examinations 2020
(Under CBCS Pattern)
Semester - VI
Subject: NUTRITION
Paper: DSE - 4 (T + P)
(Methods for Epidemiological Data Analysis – Theory + Practical)
(Food Packaging – Theory + Practical)
(Bakery Technology and Mushroom Culture – Theory + Practical)
(Sea Food and Diary Technology – Theory + Practical)

Full Marks: 40 (Theory) + 20 (Practical) = 60
Time: 4 Hours

Candiates are required to give their answer in their own words as far as practicable.
Questions are of equal value.

Answer any **one question** [within 250 words] from each Part.

Part A: Methods for Epidemiological Data Analysis (Theory)

1. Define vital statistics. Write the importance of vital statistics.
2. Describe about epidemiological approach.
3. Elaborate about different mortality rates and ratios (Crude death rate, Specific death rate, Case fatality rate, Proportional mortality rate, Survival rate, Adjusted or standardized rate).

4. Describe time distribution and person distribution in descriptive method of epidemiology.
5. Distinguish prospective study and retrospective study with example? What is meant by odd ratio?
6. What is relative risk and attributable risk? Describe the basic steps of Randomized Control Trial.
7. Write the basic principles of software 'R' in the graphical presentation of data.
8. Write about the definition and characteristic features of mean, median and mode.
9. What do you mean by covariance? Write its characteristic feature. State the different types of skewness and their features with diagram.
10. What do you mean by type-I and type-II error? Define null hypothesis and alternate hypothesis. Write down their characteristic features.
11. Describe the features of student 't' test with example.
12. Write a short note on 'chi-square test of independence' and 'goodness of fit'. Why ANOVA is more scientific for significance analysis than 't' test?

Part B: Methods for Epidemiological Data Analysis (Practical)

1. Give a demo of questionnaire to identify prevalence rate of diabetes in a community.
2. Calculate the incidence rate from the supplied data.
3. Write the sequential steps of drawing a bar diagram using the software 'R'.
4. Identify the correlation between the two variables from the supplied data.

Part A: Food Packaging (Theory)

1. What are the purposes of food packaging?
2. State different types of plastics. Write about the different plastic-based packaging materials used.
3. Write short note on lamination. Write a short note on the labeling laws.
4. What are the functions and requirement of food packaging? Write down importance of using biodegradable plastics.
5. Write short note on edible packaging. Enumerate your idea about different paper-based packaging materials used.
6. Classify closures. What are the environmental concerns for recycling and disposal of plastic waste?
7. Write packaging design for fresh horticultural produce food. Discuss the different methods of bottle making
8. How bursting strength of a packaging material is conducted?
9. Write on food packaging laws and regulations.
10. How controlled atmosphere packaging is done? Write a short note on testing procedures of packaged food.
11. Discuss on the aseptic packaging system.
12. What is active and intelligent packaging system ? Write short notes on bottling machines and cartoning systems.

Part B: Food Packaging (Practical)

1. Write down methods of testing for any of the mechanical properties of food packaging material.
2. How will you determine thermal shock resistance of glass?
3. How gas packaging of food is done?
4. Describe about any two edible packaging material.
5. How water vapour transmission rate of packaging material is determined?
6. Write operation of FFS machine.
7. Write the procedures to determine the shelf life of foods.

Part A: Bakery Technology and Mushroom Culture (Theory)

1. Write the steps of baking process to prepare any bread, buns. Also mention the ingredients used in it.
2. Define Macroni product and give some example. Which are the equipments used in Cookies industry?
3. What are the aspects of modified bakery products? How does the meat and mushroom are prepared for pizza to serve the topping purpose?
4. Write about the production procedure of breakfast cereals. How malted foods are prepared?
5. What are the characteristics of edible mushrooms? What is poisonous mushroom? How do you test poisonous mushroom by Meixner test?
6. What are the types of edible mushrooms available in India-give examples? Write the morphology & life cycle of mushrooms.
7. Write the process of mushroom cultivation.
8. How does storage affect nutrient status in mushroom? Write the difference between short term storage & long-term storage with example. What is drying?
9. Write on different long-term storage processes. Discuss about different drying processes for mushroom preservation.
10. What is the current position of bakery industry in India? State the different types of icings in cake industry.
11. How we can assess product quality of a baked product? State the demerits or fault arises in baked food production and mention the corrective measures?
12. Write the process of making a cake. What are the prerequisites to be a good quality baked product?

Part B: Bakery Technology and Mushroom Culture (Practical)

1. Write the methods of making bread or bun. How can we assess its quality?
2. Write the methods of cookies, mentioning the ingredients with their nutritional aspects.
3. Submit a field report on visit to a mushroom culture center.
4. Write the preparation method of any food from mushroom.
5. Write the method of pizza base preparation and methods of assessment of its quality.
6. Write the method of sponge cake preparation with icing and methods of assessment of its quality.

Part A: Sea Food and Diary Technology (Theory)

1. Write short note on air blast freezing of system for fish. Write different salting method of fish
2. Discuss on pindang and fishwood. Write down principle of canning of fish.
3. Write on the effect of heat processing on fish. Describe fish protein hydrolysis.
4. Write short note on these physical properties of milk: refractive index, electrical conductivity, freezing and boiling point,
5. Write down significance of lactose in dairy industry. What is your idea about fractionation of protein?
6. Write short note on these following fat constants: saponification value, iodine value, RM value, Peroxide value. Discuss briefly about condition favouring autooxidation, prevention, measurement of auto-oxidation
7. Write difference between casein and serum protein. Write different uses of casein.
8. Write the description and working principle of pasteurizer.
9. Write shrikhand and cheddar cheese making procedure along with a down flow diagram.
10. Discuss the different systems of collection of milk reception.
11. Write the procedure of homogenization with its working principle. State the advantages of using plate heat exchanger.
12. Discuss the surimi process. How does the quality of surimi products are maintained?

Part B: Sea Food and Diary Technology (Practical)

1. Explain the procedure for SNF measurement of milk.
2. Write down the methodology to determine the acidity of milk.
3. Write down the procedure for Gerber method to estimate milk fat.
4. Write down procedure for any type of flavoured milk preparation.
5. How subjective evaluation of fresh fish is done?
6. How canning of fish product is done?