

**Code No. OBS/201/FN/21**

**M.Sc. II Semester Open Book Main Examination July 2021**

**Subject : - Food & Nutrition**

**Paper-I : Advance Food Microbiology**

**Max. Marks : 35**

**Min. Marks : 12**

**Note : Attempt all questions in about 250 to 300 words.**

- Q.1** (a) Write the name of any five scientists in the development of microbiology. (3)  
(b) Describe the structure and morphological characteristics of yeast and virus. (3)  
(c) Write a note on water activity. (1)
- Q.2** (a) Explain Immunological method ELISA. (5)  
(b) Write a note on MPN. (2)
- Q.3** (i) Write the signs symptoms and prevention of- (2)  
(a) Clostridium Perfringens (2)  
(b) Shigellae  
(ii) Give the microbial intoxication in- (1.5)  
(a) Milk & milk products. (1.5)  
(b) Canned foods.
- Q.4** (a) Explain the HACCP system in detail. (5)  
(b) Probiotic bacteria. (2)
- Q.5** (i) Write the use of microorganism in the following products. (6)  
(a) Bread (b) Yoghurt (c) Wine  
(ii) Write the health benefits of fermented food. (1)



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**Subject : - Food & Nutrition**

**Paper-II : Applied Biochemistry & Techniques**

**Max. Marks : 35**

**Min. Marks : 12**

**Note : Attempt all questions in about 250 to 300 words.**

**All questions carry equal marks.**

- Q.1 Describe the functions of Niacin and Thiamine as co-enzyme, giving suitable examples. (7)**
- Q.2 (i) Write in detail the functions of biological membrane. (3½)**  
**(ii) Explain the metabolism of Hemoglobin. (3½)**
- Q.3 Describe the functioning of photo colorimeter. Explain the method of determination of unknown amount of glucose in a given sample by photo colorimeter. (7)**
- Q.4 (i) Write down the principle and technique of paper electrophoresis.(4)**  
**(ii) Write a note on use of Radio active Isotopes (3)**
- Q.5 (i0) What do you understand by Bio energetic. Write about high energy compounds in the body. (4)**  
**(ii) Explain Oxidative Phosphorylation. (3)**

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**Govt. M.H. College of Home Science & Science for women, Autonomous  
Jabalpur M.P.**

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**Subject : - Food & Nutrition**

**Paper-III : Nutrition & Health Problem**

**Max. Marks : 35**

**Min. Marks : 12**

**Note : Attempt all questions in about 250 to 300 words.  
All questions carry equal marks.**

- Q.1 Define Epidemiology? Write the approaches, aims and uses of epidemiology?**
- Q.2 Write the sources and mode of transmission of infectious diseases. Describe the general measures of prevention and control of communicable diseases? Explain Immunization Programme in India.**
- Q.3 Discuss the nutritional problems of vulnerable groups in detail? Write the Basic concepts and facts about AIDS**
- Q.4 Write the etiology, preventive and therapeutic measures of protein energy malnutrition in detail.  
Write prophylaxis program of Nutritional Anemia and Iodine.**
- Q.5 Write short note on-**  
**(a) Lathyrism causes & symptoms.**  
**(b) SARS.**

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**M.Sc. II Semester Practical Sessional Examination July 2021**

**Subject : - Food & Nutrition**

**Practical - I : Food Microbiology & Applied Biochemistry & Techniques**

**Max. Marks : 10**

**Note : All questions are compulsory.  
Each question carries two marks.**

- Q.1 Write the preparation of a culture media for cultivation of Bacteria.**
- Q.2 Give in detail the procedure of gram staining.**
- Q.3 Explain Dilution series with example.**
- Q.4 Write the principle, methodology of estimation of Ascorbic acid in lemon juice.**
- Q.5 Write in detail the principle procedure of paper chromatography.**

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**M.Sc. II Semester Practical Sessional Examination July 2021**

**Subject : - Food & Nutrition**

**Practical - II : Nutrition and Health Problems**

**Max. Marks : 10**

**Note : All questions are compulsory.**

- Q.1** Make a poster for awareness of any one life style disease/ deficiency disease. (2½)
- Q.2** Develop a high protein low cost recipe for vulnerable groups. (2½)
- Q.3** निम्न आंकड़ों से आकृति बहुभुज की रचना कीजिये:-  
Construct frequency polygon graph by the following data:- (2½)
- |                    |       |        |        |        |       |
|--------------------|-------|--------|--------|--------|-------|
| Marks in English : | 0-10, | 10-20, | 20-30, | 30-40, | 40-50 |
| No. of Students :  | 8     | 20     | 36     | 15     | 6     |
- Q.4** सांख्यिकी में वर्गीकरण के सामान्यतः आधार क्या हैं? एक रिक्त सारणी बनाओं जिसमें निम्न लिखित शीर्षकों की सूचनायें हों—  
(अ) पूर्ण कालिक मजदूर, अस्थायी मजदूर, कुल मजदूर  
(ब) लिंग— पुरुष तथा स्त्री  
(स) कोयले की खान, आयरन ओर की खान, कपड़ा निर्माण अद्योग, ग्लास निर्माण, माइका की खान  
What are the usual bases of classification of data in statistics. Draw a blank table title to show  
(a) The number of wholly employed, temporarily employed and total number of workers, employed :  
(b) Each class being derived in to males and females for the following.  
(c) Industries :- Coal mining, iron-ore mining cotton manufacturing glass manufacturing and mica mining. (2½)

