

## Bachelor of Science Examination: June/July-2022

Day & Date	Semester	Subject Name	Time	Code	Marks
Friday 10-06-2022	III (Repeater)	Applied Microbiology	10:30 AM To 01:40 PM	307102	75

**Instruction:** 1) Q.NO. 5 is Compulsory.  
2) Attempt any three from the remaining.  
3) All questions carry equal marks.

<b>Q.1</b>	a) Explain the principle and methods of food preservation. b) Write about the low temperature in food microbiology.	10 10
<b>Q.2</b>	a) Describe the pasteurisation process. b) Explain the food infections vs food intoxications.	10 10
<b>Q.3</b>	a) Write about tabulation of fermented foods. b) Describe the concept of probiotics and prebiotics.	10 10
<b>Q.4</b>	a) Describe production of dairy products involving microorganism. b) Explain the varieties of fermented milk.	10 10
<b>Q.5</b>	<b>Write a short note on following. (Any Three)</b> 1) Platform test. 2) Thermotolerant count. 3) Design of fermenter with uses. 4) Fed batch fermenter.	15

## Bachelor of Science Examination: November/December - 2022

Day & Date	Semester	Subject Name	Time	Code	Marks
Friday 25-11-2022	III (Fresh/ Repeater)	Foundation Course – Women's Issue	11:00 AM To 12:00 PM	300101	30

Instruction: 1) Attempt any two questions from Q.1 to Q.4.  
2) Q.5 is compulsory.

- Q.1 a) Write the Governmental policies strategies for women's development? 12
- b) Explain the Demographic Profile of Women in India with following points.
- 1) Sex-Ratio
  - 2) Women's Health
  - 3) Women's Employment
- Q.2 a) Explain women's work in an organized sector. 12
- b) Discuss the women and health status of women in India?
- Q.3 a) Explain A National Policy for Empowerment of Women 2001. 12
- b) Explain Women's work in unorganized sector.
- Q.4 a) What are the legal provisions for the protecting of working women? 12
- b) Explain the role of voluntary organization and NGO in women's development.
- Q.5 **Short Notes: (Any One)** 06
- a) Sex Ratio of Women in India
  - b) Women's Education in India

# Bachelor of Science Examination: November/December - 2022

Day & Date	Semester	Subject Name	Time	Code	Marks
Wednesday 30-11-2022	III (Fresh/ Repeater)	Applied Microbiology	11:00 AM To 01:30 PM	307102	75

**Instructions:** 1. All questions are compulsory.  
2. Q.5 is compulsory.  
3. Attempt any three from the remaining.

- Q.1** a) Explain the types of spoilage of foods. 10  
b) Write about the use of preservatives. 10
- Q.2** a) Describe the canning. 10  
b) Explain the Sterilisation process. 10
- Q.3** a) Write about microbial flora of milk. 10  
b) Describe the desirable and undesirable changes in milk by microorganism. 10
- Q.4** a) Describe about the grading of milk. 10  
b) Explain the variety of cheeses. 10
- Q.5** Write short notes for the following: (any 3) 15  
a) DMC  
b) Downstream  
c) Batch fermentation  
d) Biomass



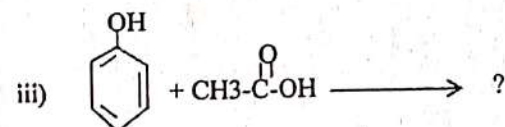
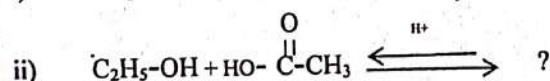
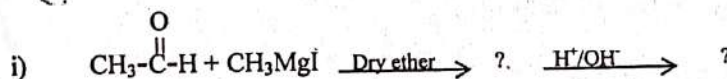
# Bachelor of Science Examination: November/December-2022

Day & Date	Semester	Subject Name	Time	Code	Marks
Friday 02-12-2022	III (Fresh/ Repeater)	Organic Chemistry – I	11:00 AM To 01:30 PM	302101	75

Instruction: 1) All Questions are compulsory.  
2) All Questions carry equal marks.

**Q.1 Attempt any Five of the following.**

- Explain Gatterman-Koch synthesis with example.
- What happens when methane is heated with  $\text{HNO}_3$  at R.T.
- Define alcohols. Classify monohydric alcohols.
- Explain 'Basicity of amines'.
- Define Phenol. Discuss the acidic nature of Phenol.
- Give the physical properties of Carboxylic acid.
- Give the preparation of ethylene glycol by using  $\text{OsO}_4$ .
- Discuss the Bayer's Villiger's oxidation of ketone.
- Give preparation of Phenol from amine.
- Complete the following reaction:



**Q.2 Attempt any Three of the following.**

- Explain Pinacol-Pinacolone rearrangement in detail.
- Discuss Claisen rearrangement with mechanism.
- Define Dihydric alcohols & give preparation of glycerol from Propane.
- Discuss physical properties of Phenol. How does phenol prepared from
  - Chlorobenzene
  - Cumene
- Discuss the Acidity of Phenol. Give the nitration & sulphonation reaction of Phenol.

**Q.3 Attempt any Three of the following.**

- Discuss the Hell-Volhard Zeliensky reaction with example.
- Give any two methods for preparation of Acrylic acid.
- Explain synthesis of malic acid & give uses of Citric acid.
- What is Carboxylic acid? Discuss the Acidity of Carboxylic acid.
- How the Acetic acid prepared from
  - Acid chloride
  - $\text{CO}_2$
  - Ester



## Bachelor of Science Examination: November/December-2022

Day & Date	Semester	Subject Name	Time	Code	Marks
Monday 05-12-2022	III (Fresh/ Repeater)	Physical Chemistry – I	11:00 AM To 01:30 PM	302102	75

Instruction: 1) All Questions are compulsory.  
2) All Questions carry equal marks.

**Q.1 Attempt any five of the following.**

15

- State and Explain internal energy and enthalpy.
- State and Explain first law of thermodynamics.
- Define Terms system, surrounding and boundary.
- State and Explain Extensive Property and Intensive Property.
- State and Explain Carnot cycle.
- Give the different statements of second law of thermodynamics.
- Give the thermodynamics processes.
- State and Explain equilibrium constant.
- State and Explain free energy.
- State and Explain entropy.

**Q.2 Attempt any three of the following.**

15

- Define Gibbs function and give the difference between reversible and irreversible process.
- Give the relationship between the heat capacity at constant volume and at constant pressure.
- What is work and give the concept of maximum work done.
- What is Carnot cycle? Explain Carnot theorem.
- Give in brief physical significance of entropy and explain entropy as state function.

**Q.3 Attempt any three of the following.**

15

- What is Hess's law of heat Summation give its application.
- Explain Gibbs and Helmholtz function.
- Explain heat capacity and Work.
- Derive Clausius – Clapeyron Equation and its application.
- Explain in brief Gibbs function, Enthalpy and Helmholtz function.

**Q.4 Attempt any three of the following.**

15

- State and explain the reaction isotherm.
- Discuss the application of Clausius - Clapeyron Equation.
- State & explain law of mass action.
- A certain fuel gives  $1.66 \times 10^3$  KJ of heat/Kg. Calculate the Maximum work, which can be obtained from in an engine in which working substances are  $H_2O$  and  $Hg$ . The temperature 373K and 360 K (Temperature of sink is 300K in each case)



## Bachelor of Science Examination: November/December - 2022

Day & Date	Semester	Subject Name	Time	Code	Marks
Wednesday 07-12-2022	III (Fresh/ Repeater)	Paracitology	11:00 AM To 01:30 PM	305101	75

**Instruction: All Questions are Compulsory.**

**Q.1 a) Match the following.** 04

- |                          |                      |
|--------------------------|----------------------|
| 1) E. Histoytica         | a) Creeping eruption |
| 2) Plasmodium Vivax      | b) Intestinal lesion |
| 3) W. Bancrofti          | c) Malaria           |
| 4) Ancylostoma Duodenale | d) Elephantiasis     |

**b) Define (Any Three)** 06

- 1) Swine flu.
- 2) Tuberculosis
- 3) Endoparasite
- 4) Rabies

**c) Fill in the blanks:** 05

- 1) The sandfly during feeding are phagocytized and develop into \_\_\_\_\_ amastigotes.
- 2) The parasite which lives outside the body of host is called as \_\_\_\_\_.
- 3) Trypanosoma Gambience cause \_\_\_\_\_ Sickness.
- 4) Ascaris lumbricoids is commonly known as \_\_\_\_\_.
- 5) Female Anopheles Mosquito causes \_\_\_\_\_.

**Q.2 Answer any two of the following.** 15

- a) Describe life cycle of Taenia solium.
- b) Explain pathogenicity cause by wuchereria bancrofti.
- c) Explain in detail about process, treatment, diagnosis, Prevention, Transmission, and Control measure of Malaria.
- d) Describe life cycle of entamoeba histolytica.

**Q.3 Answer any three of the following.** 15

- a) Reservoir of disease Transmission.
- b) Mode of Infection of entamoeba histolytica.
- c) Mode of Infection of Plasmodium vivax.
- d) Morphological structure of T. Gambience.

## Bachelor of Science Examination: November/December - 2022

Day & Date	Semester	Subject Name	Time	Code	Marks
Thursday 15-12-2022	III (Fresh/ Repeater)	Environmental Microbiology	11:00 AM To 01:30 PM	307101	75

Instruction: 1) Q. 5 is compulsory.  
2) Attempt any three from the remaining.  
3) All questions carry equal marks.

- Q.1 a) Define protein with its classification. 10  
b) Write about the lipid storage and structural lipid. 10
- Q.2 a) Explain the central dogma of molecular biology. 10  
b) Write about the discovery of DNA as genetic material. 10
- Q.3 a) Explain the growth curve. 10  
b) Write about the Breed's count. 10
- Q.4 a) Describe the spread and pour plate technique. 10  
b) Write the effect of environmental factors on growth. 10
- Q.5 Write short notes. (Any Three) 15  
a) Gene and its functions  
b) Nucleosides  
c) Genetic code is triplet  
d) Viruses