



PRABHAT KUMAR COLLEGE, CONTAI

M.A. 4TH Semester Examinations 2021
(Under CBCS pattern)

Subject : Chemistry

PAPER/COURSE – CHEM (INORG): 404
CHEMISTRY IN TECHNOLOGY

FULL MARKS : 50

TIME : 02 Hrs.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the right-hand margin indicate full marks.

Attempt any Four (04) of the following:

4 x 10

1. Explain three biophysical techniques to understand drug-DNA interaction. 10
2. Explain the basic principle of the electron microscopy and atomic force microscopy (5+5)
3. Write the working principle of fluorescence microscopy. Write the toxic effect of Ozone and PAN. (5+5)
4. Write down the basic and working principle of Circular Dichroism spectroscopy. How it is helpful to investigate small molecule and macro molecule interaction study. (5+5)
5. Write the toxic effect of Arsenic and Cadmium. (5+5)
6. What do you mean by corrosion? Write the principle of the electrochemical aspects of corrosion. Write briefly about the prevention of corrosion. (3+3+4)
7. Write the structure and function of DNA. (5+5)
8. Write a short note on (5+5)
 - a) Working principle of phase contrast microscope
 - b) Toxic effect of cyanide.

(Internal Assessment - 10)



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Subject : Chemistry

PAPER/COURSE – CHEM (ORG): 404
CHEMICAL PRINCIPLES IN FOOD SCIENCE AND TECHNOLOGY
FULL MARKS : 50
TIME : 02 Hrs.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the right-hand margin indicate full marks.

Attempt any Four (04) of the following:

4 x 10

1. Describe in detail about the different types of milk. 10
2. What is milk? Make a note on Pasteurization of milk. What is the primary function of homogenization? (2+4+4)
3. What is parboiled rice? Describe the detail process of Milling of wheat. How milled rice is produced. (2+4+4)
4. What is the chemical composition of Fats and oils? Describe in detail about Oxidative Rancidity? Why Rheology testing of food was performed? (3+5+2)
5. Define smoke point of fat. What is Riechert-Meisslvalue. Write a short note on Polenski Value. What is the importance of Iodine index? What is Margarine? (2+2+2+2+2)
6. Describe shortly about preparation of ketchup and mango pickles. Mention the role of sweeteners in food industry. (8+2)
7. Enlist and explain different processing steps involved in canning of fruits and vegetables. Discuss nutritional importance of Fats and Oils. What is fermented food? Give example.(4+4+2)



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8. Write a short note about Essential commodities Act. What is the role of antioxidant in food preservation? What is ISO 9000 certification? What is the meaning of Hazard Analysis Critical Control Point (HACCP)? (3+2+3+2)

(Internal Assessment - 10)

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