

se. No. of Question Paper: 1770

**Unique paper code** : 2201102  
**Name of the paper** : Principles of Food Science  
**Name of the course** : B. Tech Food Technology  
**Semester** : I  
**Duration** : 3 hours  
**Maximum marks** : 75 marks

F-3

### **INSTRUCTIONS FOR CANDIDATES**

Attempt Five questions in all.

Question No. 1 is compulsory.

## Principles of Food Science

Time- 3 hrs

75 marks

Attempt Five questions in all.

Question No. 1 is compulsory

1 (a). Fill in the blanks

(1x10=10)

- i. The endosperm of wheat grain is surrounded by one or more layers of \_\_\_\_\_ cells.
- ii. \_\_\_\_\_ enzyme is responsible for natural ripening of meat.
- iii. The germ and scutellum are rich in \_\_\_\_\_ and \_\_\_\_\_
- iv. During the process of germination \_\_\_\_\_ enzyme is activated.
- v. \_\_\_\_\_ rice is less susceptible to breakage during milling.
- vi. \_\_\_\_\_ enzyme is responsible for oxidative rancidity of oils.
- vii. The waxy starches are high in \_\_\_\_\_.
- viii. \_\_\_\_\_ eliminates trypsin inhibitors in pulses.
- ix. \_\_\_\_\_ is the process of breaking down of fat globules in milk.
- x. \_\_\_\_\_ enzyme is used as an indicator for pasteurization of milk.

(b) Write the most appropriate alternative for the following:

(1x5=5)

- i. The predominant pigment present in tomatoes is.  
Lycopene/ Xanthophyll/ Beta carotene/ Anthocyanins
- ii. The following is an example of fin fish.  
Mollusks/ crabs/ clams/ mackerel/ shrimps
- iii. Which of the following vegetable oil is rich in monounsaturated fatty acid?  
Coconut/ soyabean / mustard/ sunflower
- iv. Which of the following is a coarse cereal product?  
Wheat flakes / Parched rice/ Corn flakes/ Soya nuggets
- v. Which of the following is not an antinutritional factor in pulses?  
Goitrogens / Saponins/ Tannins/ Lysine

**Q2. Differentiate between: (any five)**

**(3x5=15)**

- a) Lathyrism and Favism
- b) Pasta wheat and Biscuit wheat
- c) Climacteric and Non- climacteric fruits
- d) Fermentation and Germination
- e) Whole milk and Skimmed milk
- f) Vegetable proteins and Animal proteins

**Q3. a) Describe the artificial methods used in meat tenderization. Draw the structure of egg.**

**(10)**

**b) What were the salient features of the Neolithic revolution?**

**(5)**

**Q4. Comment on the following statements (any five)**

**(3x5=15)**

- a) Parboiled rice is nutritionally superior.
- b) Germination improves digestibility and availability of nutrients.
- c) Enzymatic browning can be arrested by inactivating the enzyme.
- d) Antioxidants are capable of extending the shelf life of fats and oils.
- e) Egg proteins are considered of high biological quality.
- f) Maillard browning is desirable in baking.

**Q5. Write briefly on the following and state their significance in food industry (any three)**

**(5x3=15)**

- a) Malting of barley.
- b) Hydrogenation of oils.
- c) Refining of oils.
- d) Pasteurisation of milk.

**Q6. a) Enlist the various pigments present in fruits and vegetables. Explain the effect of pH on them.**

**(8)**

**b) Define carcass and give the classes of meat. What are the post mortem changes in meat?**

**(7)**

**Q7. Write short notes on: (any three)**

**(5x3= 15)**

- a) Impact of war on the development of food processing industry.
- b) Rancidity in fats and oil.
- c) Post harvest changes in fruits and vegetables.
- d) Fish Spoilage
- e) Characteristics of fresh fish