

This question paper contains 3 printed pages]

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S. No. of Question Paper : 1182

Unique Paper Code : 2173010002

Name of the Paper : DSE : Inorganic Materials of Industrial Importance

Name of the Course : B.Sc. Prog.

Semester : V

Duration : 2 Hours

Maximum Marks : 60

(Write your Roll No. on the top immediately on receipt of this question paper.)

Attempt four questions in all.

All questions carry equal marks.

1. (i) Fill in the blanks :

(a) Ceramics is a type of

(b) TiO_2 is an example of

(c) Urea is an example of a fertilizer.

(d) Nutrients which are required in very small quantity by plants are called

(e) Photosensitive glasses are sensitive in region.

(ii) True or False :

(a) Presence of metallic powders such as Sn, Zn and Al etc. makes paint heat resistance.

P.T.O.

- (b) Fiber glass can neither be spun into yarn nor gathered into a mat.
 - (c) Fertilizers are used to manage pests in the crop.
 - (d) Plasticizers induces cracking in the paint.
 - (e) Use of fertilizers leads to water pollution.
- (iii) Define pigment with *one* example.
- (iv) What is the composition of borosilicate glass and where it is used ?
- (v) Name the raw material used for the manufacturing of Portland cement.

5,5,2,2,1

2. (i) Differentiate between the following (any *two*) :

- (a) Photosensitive and Photochromic glass
 - (b) Pigment volume concentration and Critical pigment volume concentration.
 - (c) Chemical vapour deposition and Physical vapour deposition method of surface coating.
- (ii) Define thinner and plasticizer. Also mention their role in the formulation of paint.
- (iii) How will you differentiate between porous and non-porous ceramics. Mention the important properties of ceramics which makes it useful for building construction.

5,5,5

3. (i) Briefly describe the environmental impact of using fertilizers in farming.

- (ii) Define ceramics and explain that why do we need to glaze the ceramic products ?
- (iii) Write down the general characteristics of a good paint.

5,5,5

4. (i) "Slag is an eco-friendly cement". Justify the given statement.
- (ii) What is the role of Nitrogen, Potassium and Phosphorous as a plant nutrient ?
- (iii) What are the different constituents of paint ? Write a brief note.
- 5,5,5
5. (i) How does urea function as an effective fertilizer for plants ? Give *one* method for the manufacture of urea.
- (ii) What is the importance of applying surface coating to the objects ? Discuss the process of carburizing.
- (iii) Define the term Cement. What is the composition of Pozzolana cement ?
- 5,5,5
6. (i) What do you mean by fertilizer ? Why do we need to add them to the soil ?
- (ii) What is the composition of the Lead glass and Fluorosilicate glass ? Write their uses also.
- (iii) What do you mean by Emulsion paint ? Write its different constituents and advantages.
- 5,5,5