

(i) Printed Pages : 2

Roll No. ....

(ii) Questions : 9

Sub. Code :

0	5	4	7
---	---	---	---

Exam. Code :

0	0	0	6
---	---	---	---

B.A./B.Sc. (General) 6<sup>th</sup> Semester  
(2042)

CHEMISTRY (Same for B.Sc. Microbial and Food Technology)

Paper—XXI: Inorganic Chemistry-B

Time Allowed : Three Hours]

[Maximum Marks : 22

Note :— Attempt **five** questions in all, selecting at least **one** question each from Unit-I to Unit-IV. Question No. 1 is compulsory.

1. (a) What are inorganic polymers and how are they classified ?  
2
- (b) Calculate spin only magnetic moment for  $Ti^{3+}$  and  $Ti^{+}$  ions.  
2
- (c) What are the uses of Orgel diagram ?  
2

#### UNIT-I

2. Is silicon and silicone the same ? Give a brief account of synthesis of silicones.  
4
3. Describe the nature of bonding in triphosphazenes.  
4

#### UNIT-II

4. How is electronegativity related with hardness and softness of acids and bases ?  
4



5. What are hard and soft acids and bases ? Explain with example. 4

### UNIT-III

6. Draw and discuss the Orgel energy level diagram for  $[\text{Cu}(\text{H}_2\text{O})_6]^{2+}$  complex ion. 4
7. What is a ground state term symbol ? What is the ground state energy level for  $d^9$  octahedral complex ? 4

### UNIT-IV

8. What is temperature independent paramagnetism ? Write your answers with appropriate examples. 4
9. What is magnetic susceptibility ? How does it vary with temperature ? 4