

UG Odd Semester (CBCS) Exam., December—2016

B.Sc (Honours) B.Ed

CHEMISTRY

(Honours)

(7th Semester)

Course No. : BSCH-703

(Inorganic Chemistry)

Full Marks : 50
Pass Marks : 20

Time : 2 hours

*The figures in the margin indicate full marks
for the questions*

1. (a) Write the differences between chemical equilibrium and radioactive equilibrium. 2
- (b) The mass of ${}_{17}\text{Cl}^{35}$ is 34.9800 a.m.u. Mass of each proton is 1.007825 a.m.u., mass of each neutron is 1.008665 a.m.u. What is the binding energy per nucleon? 4
- (c) Write a short note on packing fraction. 4

OR

2. (a) Write the importance of Q-value in nuclear reaction. 4
- (b) Write a short note on interstitial solid solution. 4
- (c) Write the significance of Hume-Rothery rule. 2
3. (a) Explain C , V and D_h point groups with examples. $3 \times 2 = 6$
- (b) Predict the point group of cyclobutane and various symmetry operations. 4

OR

4. (a) Explain alternating axis of symmetry with example. 3
- (b) Explain C_s point group with example. 3
- (c) Predict the point group of staggered C_2Cl_6 and various symmetry operations. 4

(3)

5. (a) Write a short note on boron nitride. 4
- (b) Applying Wade's rule, predict the structure of B_6H_{10} and draw the structure. 6

OR

6. (a) Write a short note on silanes. 4
- (b) Applying Wade's rule, predict the structure of $B_{10}H_{14}$ and draw the structure. 6

7. (a) Write the Curie-Weiss law. 2
- (b) What is Bohr magneton? 2
- (c) Co (III) hexa amine complex is diamagnetic. Justify. 3
- (d) $K_3[CuF_6]$ is paramagnetic while $K[AgF_4]$ is diamagnetic. Explain. 3

OR

8. (a) Write a short note on hemeprotein Hb. 5
- (b) Write the roles of alkali and alkaline earth metals in metabolism. 5

(4)

9. (a) Describe the principle of atomic absorption spectroscopy. 5
- (b) Explain the use of atomic absorption spectroscopy. 5

OR

10. (a) Describe the principle of polarography. 5
- (b) Explain the use of polarography. 5
