

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

First Semester Integrated M.Sc Geology Degree Examination, November 2020

BCH1C01 – General Chemistry

(2020 Admission onwards)

Time: 2 hours

Max. Marks: 60

Section A (Short answers)

(Answer questions up to 20 marks. Each question carries 2 marks)

1. Distinguish isobars and isotones with suitable examples.
2. Define Equivalent mass of an acid and a base.
3. Explain Pauli's Exclusion principle.
4. Explain the Lattice energy of an ionic compound.
5. What is bond order? Calculate the bond order of N_2 .
6. Explain wave-particle duality.
7. Calculate the de Broglie wavelength of an electron of mass 9.1×10^{-31} kg moving with a velocity 6.3×10^5 m/s.
8. Give the characteristics of alpha rays.
9. Which of the following nuclides would you expect to be stable?
(a) ${}^9\text{Be}^{10}$ (b) ${}^{12}\text{F}^{17}$ (c) ${}^{12}\text{Mg}^{24}$
10. Give examples for trace metal ions.
11. Mention the differences between haemoglobin and myoglobin.
12. Explain Accuracy and Precision

[Ceiling of marks: 20]

Section B (Paragraph)

(Answer questions up to 30 marks. Each question carries 5 marks)

13. What is double burette method of titration? What are the advantages of it?
14. Explain the function of *complexometric indicators*.
15. Explain Quantum numbers .
16. Explain the structures of ClF_3 , SF_4 and XeF_4 .
17. Correlate N/P ratio and nuclear stability.
18. Explain the term Nuclear fusion with suitable example. Why fusion reactions are called thermonuclear reactions ?
19. Explain the mechanism of Sodium-Potassium pump.

[Ceiling of marks: 30]

Section C (Essay)

(Answer any one. Each question carries 10 marks)

20. Write a note on Intermolecular forces.

21. Discuss Photosynthesis.

[1 x 10 = 10 Marks]

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(Pages : 2)

Reg. No:.....

Name:

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First Semester Integrated M.Sc Geology Degree Examination, November 2020

IGL1CO1 - THE EARTH AND ENVIRONMENT
(2020 Admission onwards)

Time: 2 ½ hours

Max. Marks: 80

PART - A

Answer *all* questions.

Each question carries **Two** mark.

Ceiling -25 Marks

1. Asteroids
2. Conard, Reppetti, Guttenberg Weichert and Mohrovic discontinuities.
3. Lower continental crust and Upper continental crust
4. Moh's Hardness scale?
5. Oldest stratigraphic period
6. Era
7. Anticlines and Synclines
8. Denudation
9. Epicentre
10. Mofettes, Saffoni and Salfataras
11. Isoleismal line
12. Asthenosphere
13. Hypabyssal igneous rocks
14. Laccoliths
15. Different types of Morains.