

SHIVAJI UNIVERSITY, KOLHAPUR

QUESTION BANK FOR MARCH 2022 (SUMMER) EXAMINATION

SUBJECT CODE : 81701

SUBJECT NAME ; GEOLOGY

B.Sc III Semester VI

DSE 44F (Paper XVI) : GEOCHEMISTRY

A. Fill in the blanks: (1 mark)

- The Atomic radii is measured in unit _____.
a. **Angstrom** b. Millimeters c. Microns d. Macrons
- The lowest energy level in an atom is _____.
a. Q b. P c. L d. **K**
- The highest energy level in an atom is _____.
a. N b. **Q** c. O d. P
- In an atom, the subshells are also known as _____.
a. **Orbital Quantum Number** b. Principal Quantum Number
c. Electron Quantum Number d. Proton Quantum Number
- The s- subshell in an atom has maximum _____ electrons.
a. **Two** b. Six c. Ten d. Twelve
- The d- subshell in an atom has maximum _____ electrons.
a. Fourteen b. **Ten** c. Six d. Two
- Principal Quantum Number "K" in an atom has maximum _____ electrons.
a. **Two** b. Eight c. Eighteen d. Thirty-Two
- Principal Quantum Number "L" in an atom has maximum _____ electrons.
a. Two b. **Eight** c. Eighteen d. Thirty-Two
- Principal Quantum Number "M" in an atom has maximum _____ electrons.
a. Two b. Eight c. **Eighteen** d. Thirty-Two
- The s-subshell in an atom has _____ shape.
a. **Sphere** b. Dumb-bell c. Double Dumb-bell d. Multiple lobes
- The p-subshell in an atom has _____ shape.

- a. Sphere b. **Dumb-bell** c. Double Dumb-bell d. Multiple lobes
12. The d-subshell in an atom has _____ shape.
- a. Sphere b. Dumb-bell c. **Double Dumb-bell** d. Multiple lobes
13. The number of protons in an atom is called _____ .
- a. **Atomic Number** b. Atomic Weight c. Atomic Mass d. Molecular Weight
14. The total number of protons and neutrons is the _____ of an atom.
- a. Atomic Number b. Atomic Weight c. **Atomic Mass** d. Molecular Weight
15. The difference between the number of protons and electrons is _____ of an atom.
- a. Atomic Weight b. Atomic Mass c. Atomic Number d. **Valency**
16. The process of losing an electron is called _____.
- a. **Oxidation** b. Reduction c. Hydrolysis d. Osmosis
17. The process of gaining an electron is called _____.
- a. Oxidation b. **Reduction** c. Hydrolysis d. Osmosis
18. The bonding in which there is an transfer of electron from an atom to other atom is called _____.
- a. **Ionic bond** b. Covalent bond c. Metallic bond d. van der Waal's Forces
19. Halite shows _____ .
- a. **Ionic bond** b. Covalent bond c. Metallic bond d. van der Waal's Forces
20. The sharing of an electron between two or more atoms takes place in _____ .
- a. Ionic bond b. **Covalent bond** c. Metallic bond d. van der Waal's Forces
21. Carbon atoms in diamond show _____ bonding.
- a. Ionic b. Metallic c. **Covalent** d. van der Waal's forces
22. The strongest bond in the minerals is the _____ .
- a. Ionic bond b. **Covalent bond** c. Metallic bond d. van der Waal's forces
23. The weakest bond in the minerals is the _____ .
- a. Ionic bond b. Covalent bond c. Metallic bond d. **van der Waal's forces**
24. In co-ordination polyhedral, 2-fold co-ordination between anions is called _____ co-ordination.
- a. **Linear** b. Triangular c. Tetrahedral d. Cubic
25. In co-ordination polyhedral, 3-fold co-ordination between anions is called _____ co-ordination.
- a. Linear b. **Triangular** c. Tetrahedral d. Cubic

26. In co-ordination polyhedral, 4-fold co-ordination between anions is called _____ co-ordination.
- a. Linear b. Triangular c. **Tetrahedral** d. Cubic
27. In co-ordination polyhedral, 6-fold co-ordination between anions is called _____ co-ordination.
- a. **Octahedral** b. Triangular c. Dodecahedral d. Cubic
28. The number of anions to which the cation bond is the cation's _____.
- a. **Co-ordination Number** b. Atomic Number c. Molecular Number d. Bond Number
29. In cosmic abundance of elements, the pronounced peak at the atomic number is called _____ peak.
- a. Sodium b. **Iron** c. Calcium d. Silicon
30. There are _____ number of Periods in the Periodic table.
- a. Six b. **Seven** c. Eight d. Nine
31. There are _____ number of Groups in the Periodic table.
- a. Sixteen b. **Eighteen** c. Twenty d. Fourteen
32. The Group located on the extreme left hand side of the Periodic table is _____ Group.
- a. **Alkali** b. Alkaline Earth c. Inert Gas d. Transition Metal
33. Element Carbon is a _____.
- a. Metal b. **Non-metal** c. Inert Gas d. Halogen Gas
34. The Group located on the extreme right-hand side of the Periodic table is _____ Group.
- a. Alkali b. Alkaline Earth c. **Noble Gas** d. Halogen
35. An example of Inert gas is _____.
- a. Oxygen b. Nitrogen c. Bromine d. **Neon**
36. An example of Inert gas is _____.
- a. Carbon b. Oxygen c. **Xenon** d. Notrogen
37. An example of Metalloid is _____.
- a. **Boron** b. Bromine c. Sodium d. Barium
38. An example of Metalloid is _____.
- a. **Silicon** b. Galium c. Chromium d. Manganese
39. Alkaline Earth Metals are placed in Group _____ of the Periodic table.
- a. 1 b. **2** c. 3 d. 16

40. An example of Alkaline Earth Metal is _____ .
a. **Calcium** b. Copper c. Zinc d. Silver
41. Gold and Silver are examples of _____ .
a. Metals b. Alkaline Earth Metals c. **Transition Metals** d. Non-metals
42. Element Fluorine belongs to _____ Group.
a. **Halogen** b. Lanthanide c. Actinide d. Inert Gas
43. Element Chlorine are examples of _____ .
a. **Halogen** b. Actinide c. Lanthanide d. Inert Gas
44. Rare Earth Elements belong to the _____ Group.
a. Actinide b. **Lanthanide** c. Alkali d. Halogen
45. Element Uranium belongs to _____ Group.
a. Halogen b. Inert Gas c. **Actinide** d. Lanthanide
46. Element Thorium belongs to _____ Group.
a. Lanthanide b. Alkali c. Alkaline Earth d. **Actinide**
47. Elements found close to the surface of the Earth and combining readily with oxygen are _____ elements.
a. **Lithophile** b. Siderophile c. Chalcophile d. Atmosphile
48. Elements having affinity for Iron are called _____ elements.
a. Lithophile b. **Siderophile** c. Chalcophile d. Atmosphile
49. Helium is an example of _____ element.
a. Lithophile b. Chalcophile c. **Atmosphile** d. Siderophile
50. The phenomenon in which minerals show similar crystals forms, but have different chemical composition is called _____ .
a. **Isomorphism** b. Polymorphism c. Pseudomorphism d. Tectomorphism
51. Calcite and Siderite show _____ .
a. Polymorphism b. **Isomorphism** c. Pseudomorphism d. Tectomorphism
52. The phenomenon in which minerals show the same chemical composition but different structures is called _____ .
a. **Polymorphism** b. Isomorphism c. Pseudomorphism d. Neuromorphism
53. Kyanite and Sillimanite show _____ .
a. Neuromorphism b. Isomorphism c. **Polymorphism** d. Pseudomorphism

54. Kyanite and Andalusite show _____ .
a. Neuromorphism b. Isomorphism c. **Polymorphism** d. Pseudomorphism
55. Diamond and Graphite are two polymorphs of _____.
a. **Carbon** b. Silicon c. Iron d. Calcium
56. Deuterium is an isotope of _____.
a. **Hydrogen** b. Carbon c. Sulphur d. Oxygen
57. Radioactive Isotope ^{14}C has a half life of _____ years.
a. **5730** b. 15730 c. 10000 d. over million
58. Element with the maximum number of isotopes is _____.
a. **Tin** b. Oxygen c. Carbon d. Uranium
59. Photosynthesis is a part of _____ cycle.
a. **Carbon** b. Sulphur c. Phosphorus d. Nitrogen
60. Oxidation of Hydrogen Sulphide is a part of _____ cycle.
a. Nitrogen b. Carbon c. **Sulphur** d. Phosphorus

B. Write short notes on : (4 marks)

1. Structure of an Atom
2. Principal Quantum Number
3. Orbital Quantum Number
4. Tetragonal and Hexagonal Packing
5. Co-ordination Polyhedra
6. Ionic Bonding
7. Covalent Bonding
8. Alkali Group
9. Noble gases
10. Halogens
11. Lithophile elements
12. Atmophile elements
13. Isomorphism
14. Polymorphism
15. Cosmic abundance of Elements
16. Radioactive Isotopes
17. Stable Isotopes
18. Metalloids
19. Distribution of elements in Igneous rocks
20. Isotopes of Hydrogen

C. Answer the following Question : (8 marks)

1. Discuss the arrangement of elements in Periods of a Periodic table.
2. Discuss the arrangement of elements in groups of a Periodic table.
3. Describe the Geochemical classification of elements.
(Lithophile, Siderophile, Chalcophile, Atmophile)
4. Discuss the distribution of elements in Igneous, sedimentary and Metamorphic rocks.
(Major, Minor and Trace elements)
5. Describe the different types of Radioactive isotopes.
6. Describe the different types of Stable isotopes.
7. Discuss the Rock Cycle.
8. Discuss the Carbon Cycle.
9. Discuss the Phosphorus Cycle.
10. Describe the phenomenon of Isomorphism and Polymorphism.
11. Describe the different types of Bonds in minerals with examples.