



SHIKSHA CLASSES

Subject : Chemistry

Question Paper

Total Marks :25

Class : XI

9 : Elements of Group 13, 14 and 15

Time : 1 Hour

SECTION A

Q.1 : Choose the correct option : 4

i) Which of the following is not an allotrope of carbon?

- a) buckyball b) diamond
c) graphite d) emerald

Which of the following shows the most prominent inert pair effect?

- a) C b) Si
c) Ge d) Pb

iii) Which of the following is basic oxide?

- a) BiO_3 b) CO_2
c) B_2O_3 d) SiO_2

iv) Haber's process is used for the preparation of

- a) HNO_3 b.) NH_3
c) NH_2CONH_2 d) NH_4OH

Q.2 : Answer the following : 2

- i) Define : catenation
ii) Define : allotropy

SECTION B

: Answer the following : (ANY 3) 6

Q.3 : Why the atomic radius of Gallium is less than that of aluminium.

Q.4 : Explain the trend in oxidation state of elements from nitrogen to bismuth.

Q.5 : Discuss the reactivity of group 15 elements with halogens.

Q.6 : Distinguish between Diamond and Graphite.

Q.7 : Give the test that is used to detect borate radical in qualitative analysis.

SECTION C

: Answer the following : (ANY 3) 9

Q.8 : How does the aqueous solution of ammonia react with the following salt solutions?

- i) ZnSO_4 ii) FeCl_3

Q.9 : Explain the structure and bonding of diborane.

Q.10 : How are silicones prepared? Write their properties.

Q.11 : Describe the structure of graphite.

Q.12 : Write with respect to groups 13, 14, and 15 elements.

SECTION D

: Answer the following : (ANY 1) 4

Q.13 : Describe the structure of the following molecules :

- a) Aluminium Chloride
b) Orthoboric acid

Q.14 : Find out the structural formulae of given oxyacids of phosphorus.

- a) Orthophosphorus acid
b) Pyrophosphorus acid
c) Hypophosphoric acid
d) Pyrophosphoric acid

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