

CASE STUDY QUESTION 44

Read the following and answer any four questions from (i) to (v)

Study the following table in which positions of six elements A, B, C, D, E and F are shown as they are in the Modern Periodic Table :

On the basis of the table, answer the following questions :

Group →	1	2	3-12	13	14	15	16	17	18
Period ↓									
2	A					B			C
3				D	E				F

(i) The element which forms only covalent compounds is

- (a) A (b) D (c) E (d) B

Element E will form only covalent compounds because it has 4 electrons in the outermost shell so, it can neither lose nor gain 4 electrons, hence E forms compounds by sharing of electrons.

Group →	1	2	3-12	13	14	15	16	17	18
Period ↓									
2	A					B			C
3				D	E				F

(ii) Which of the following elements is a metal with valency three?

- (a) C (b) F (c) A (d) D

Element D is a metal having valency 3 as it belongs to group 13.

(iii) Which of the following elements is a non-metal with valency three?

- (a) A (b) B (c) C (d) D

Group →	1	2	3-12	13	14	15	16	17	18
Period ↓									
2	A					B			C
3				D	E				F

B is a non-metal with valency $(8 - 5 = 3)$.

(iv) Which of the following elements has largest atomic size?

- (a) C (d) D (c) E (d) F

Ans: (d) F

(v) C and F belongs to

- (a) alkali metals (b) alkaline earth metals (c) noble gases (d) transition elements.

C and F belong to group 18 and are called noble gases.