

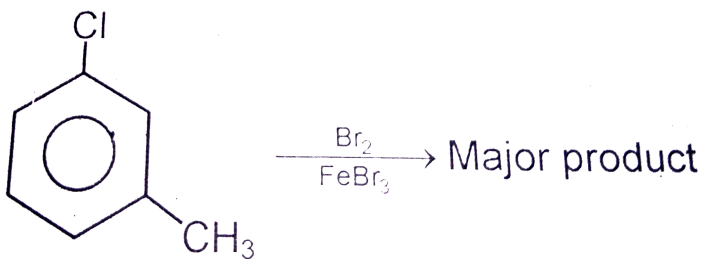
## CHEMISTRY

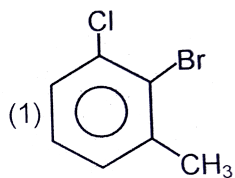
### BOOKS - AIIMS PREVIOUS YEAR PAPERS

#### AIIMS 2018 PAPER 2

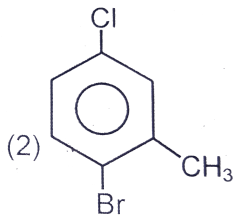
#### Chemistry

1. Complete the following reaction

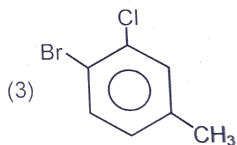




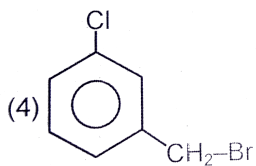
A.



B.



C.

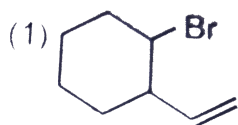
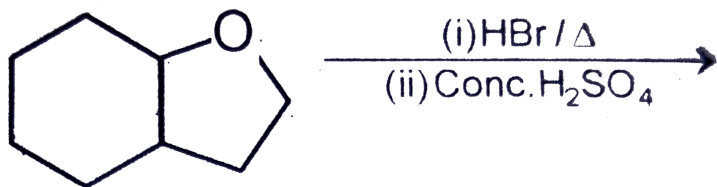


D.

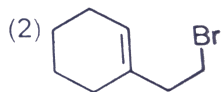
**Answer: B**

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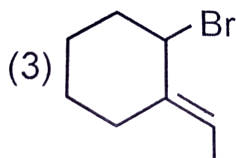
2. Complete the following reaction



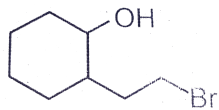
A.



B.



C.

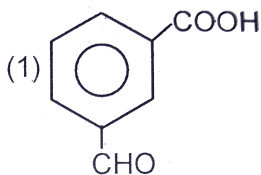
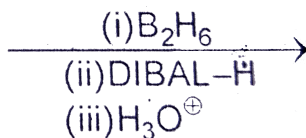
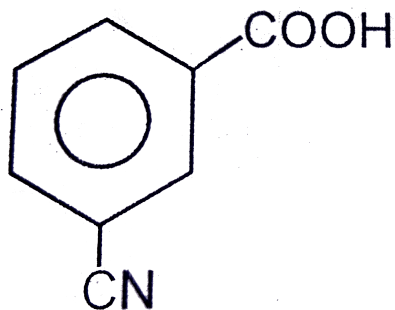


D.

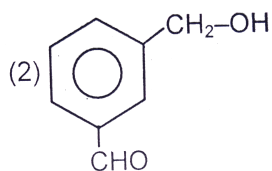
Answer: A

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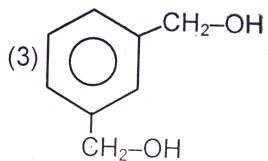
3. Complete the following reaction



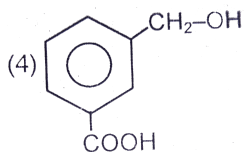
A.



B.



C.

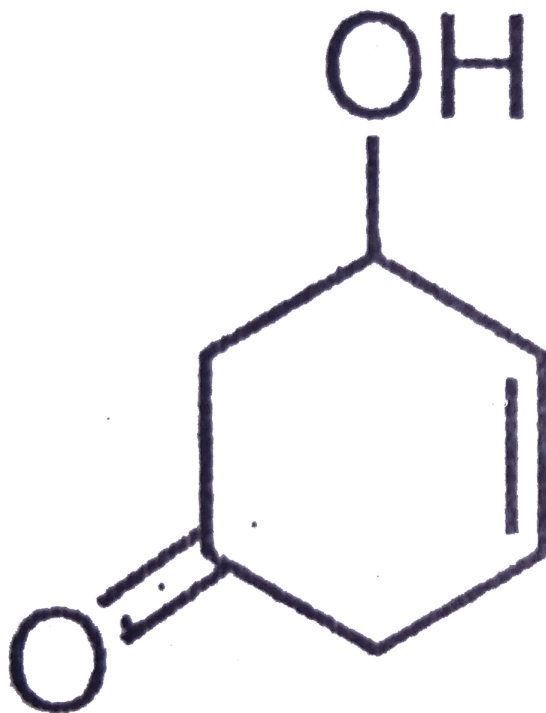


D.

**Answer: B**

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4. Choose the correct IUPAC name option for the given structure



A. 5-Hydroxy cyclohex-3-en-1-one

B. 3-Hydroxy cyclohex-5-en-1-one

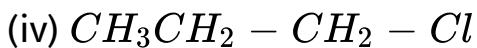
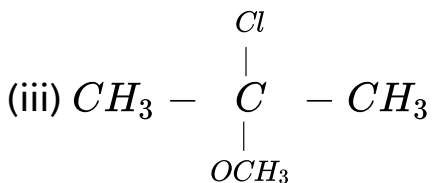
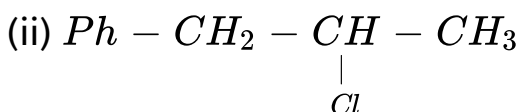
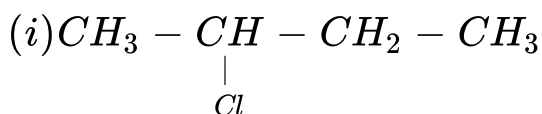
C. 8-Hydroxy cyclohex-3-en-1-one

D. 7-Hydroxy cyclohex-5-en-1-one

Answer: A

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5. Reactivity order for SN1



A.  $I > ii > iii > iv$

B.  $ii > I > iii > iv$

C.  $iii > ii > I > iv$

D.  $iv > iii > ii > i$

**Answer: B**



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**6. Which is incorrect**

A. Novestrol — Antifertility

B. Serotonine — Tranquilizer

C. Narrow spectrum — Chloromphenicol

D. Rentac– antacid

**Answer:**



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7. Ideal gas mole expand isothermally reversibly 2 lt. to 4lt and same gas 3 mole expand from 2 lt. to x lt and doing same work, what is 'x'

A.  $(8)^{\frac{1}{3}}$

B.  $(4)^{\frac{2}{3}}$

C. 2

D. 4 lt

**Answer: B**



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8. Which gas use in cooling tube in MRI tube ?

A. He

B. Ar

C.  $CO_2$

D.  $N_2$

**Answer: A**



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9. t first order reaction 80% reaction complete in 60 minute, What is  $t_{\frac{1}{2}}$  of reaction

A. 30 min

B. 42 min

C. 25.72 min

D. 14.28 min

**Answer: B**



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**10.** A gas metal in bivalent state have approximately  $23e^-$

what is spin magnetic moment in elemental state

A. 2.87

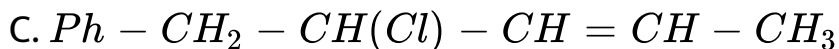
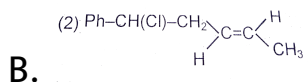
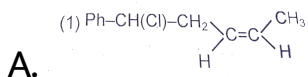
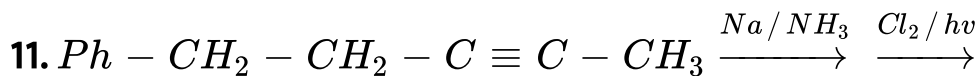
B. 5.5

C. 5.9

D. 4.9

Answer: C

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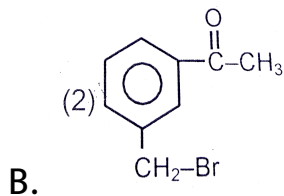
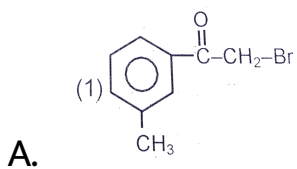
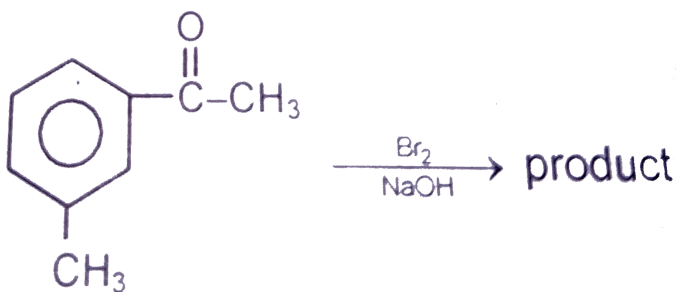


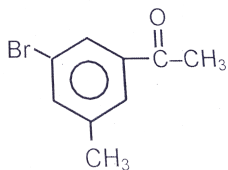
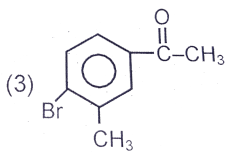
D. None of these

Answer: B

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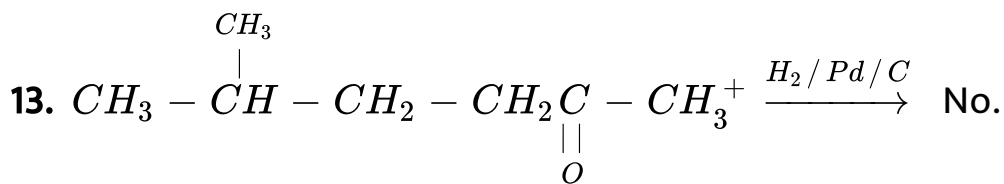
12. Complete the following reaction





**Answer: A**

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of stereoisomerism.

A. 2

B. 4

C. 8

D. 6

**Answer: A**

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**14. Order nucleophilicity**

(i)  $\text{OH}^-$     (ii)  $\text{HS}^-$     (iii)  $\text{Ph}^- \text{O}^-$     (iv)  $\text{C}_2\text{H}_5^- \text{O}^-$

A.  $I > ii > iii > iv$

B.  $ii > iv > I > iii$

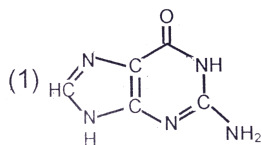
C.  $ii > iii > I > iv$

D.  $iii > iv > I > ii$

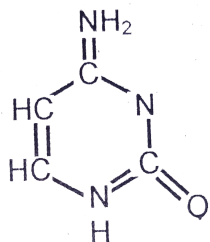
Answer: B

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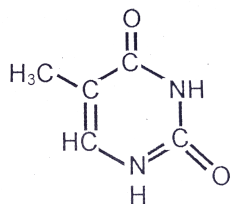
15. Structure of Guanine is



A.



B.



C.



D. None

**Answer: A**



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16.  $Cr^{\rightarrow 3}$  in aqueous medium form green coloured complex with  $NH_3$  ligand. How many ligand associated

A. 3

B. 4

C. 5

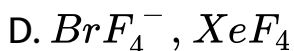
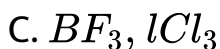
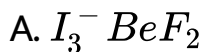
D. 6

**Answer: D**



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17. Which molecule pair do not have identical structure



Answer: C



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18. Which process use in smelting during metallurgy of coper

- A. Self reduction of copper
- B.  $Cu_2S$  is converted into  $Cu_2O$
- C. FeS convert into FeO
- D. Reduction of Fe

**Answer: C**



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19. Which of following factor always increases for spontaneous process

A.  $\Delta S$

B.  $\Delta H$

C.  $\Delta H - T\Delta S$

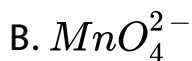
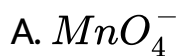
D.  $\Delta S - \frac{\Delta H}{T}$

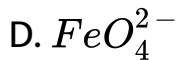
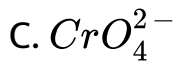
**Answer: D**



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**20.** In acidic medium which of the following does not change its colour:





**Answer: A**

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21. 1 gm of polymer having molar mass 1,60,000 gm dissolve in 800 ml water, so calculate osmotic pressure in pascal at  $27^\circ C$  ( $R = 8.314 \text{ J/K mole}$ )

A. 0.78

B. 0.90

C. 0.50

D. 1.20

**Answer: A**



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22.  $AgNO_3$  does not decompose where :

A. U.V. radiation

B. Skin (human)

C. Water  $25^\circ C$

D. Glucose

**Answer: A**



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23. What is maximum wavelength of line of Balmer series of Hydrogen spectrum ( $R = 1.09 \times 10^7 m^{-1}$ ):

- A. 400 nm
- B. 654 nm
- C. 486 nm
- D. 434 nm

**Answer: A**



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24.  $H_2S$  gas passed in all the following test tube so that precipitation observe so which is correct match :



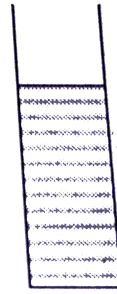
Yellow



Black



Orange



Brown

Cu, Sb, Zn, Cd, Pb, Sn, Ni

A. Cd- Black

B. Sb-orange

C. Ni-Yellow

D. Zn-Brown

**Answer: B**





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25. Which contain at least one  $e^-$  in  $\sigma_{2p}$  bonding MO

A.  $O_2$

B.  $B_2$

C.  $X_z$

D.  $Li_2$

Answer: A



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26. What is impact on benzene in magnetic field :

A. Strong attract

B. Weakly attract

C. Strongly repel

D. weak repel

**Answer: D**



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**27. Removal of charge from colloids**

A. Peptization

B. Coagulation

C. Dialysis

D. Breeding are method

**Answer: B**



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28. In Alum:  $K_2SO_4$ ,  $Al_2(SO_4)_3 \cdot 24H_2O$

Which metal can replace Al

A. Cr

B. Mn

C. In

D. Sc

**Answer: A**



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29. Rate of two reaction whose rate constants are  $k_1$  &  $k_2$

are equal at 300 k such that: So calculate

$$n \frac{A_2}{A_1} = ? \quad E_{a_2} = E_{a_1} = 2RT.$$

A.  $\ln 4$

B. 2

C.  $\log 2$

D.  $2 - \ln 2$

**Answer: B**



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30. Which of the following exhibit minimum number of oxidation states

A. Mn

B. Np

C. Th

D. Cr

**Answer: C**



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31. 0.1 mole, per litre solution present in conductivity cell where electrode of  $100 \text{ cm}^2$  area placed at 1 cm and

resistance observe is  $5 \times 10^3$  ohm, what is molar conductivity of solution?

A.  $5 \times 10^2 \text{ Scm}^2 \text{ mole}^{-1}$

B.  $10^4 \text{ Scm}^2 \text{ mole}^{-1}$

C.  $200 \text{ Scm}^2 \text{ mole}^{-1}$

D.  $0.02 \text{ Scm}^2 \text{ mole}^{-1}$

**Answer: D**



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**32.** Mixture of two metals having mass 2 gm (A = 15, B = 30) and are bivalent and dissolve in HCl and evolve 2.24 L  $H_2$  at STP . What is mass of A present in mixture ?

A. 1 gm

B. 1.5 gm

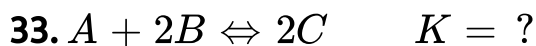
C. 0.5 gm

D. 0.75 gm

**Answer: A**



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2 mole each A and B present in 10 lt so that C form is 1 mole, Calculate  $K_c$

A. 1.5

B. 6.67

C. 0.15

D. 2.3

**Answer: B**



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**34.** In vanderwaal equation at const temperature 300 K,  $a = 14 \text{atm} \cdot \text{lt}^2 \cdot \text{mole}^{-2}$ ,  $v = 100 \text{ml}$ ,  $n = 1 \text{ mole}$ , what is pressure of gas:

A. 42 atm

B. 210 atm



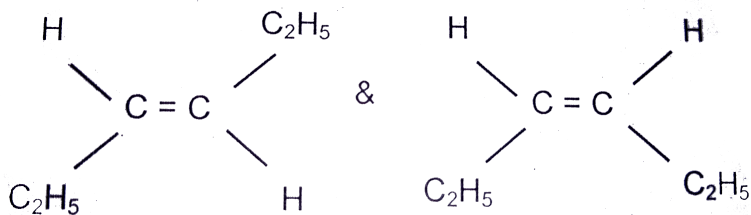
C. 500 atm

D. 106 atm

**Answer: D**

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**35.** For geometric isomers of 3-hexene :



A. M.P. is high and dipole moment high for trans

B. M.P. is low and dipole moment low for trans

C. M.P. is high and dipole moment low for trans

D. M.P. is low and dipole moment high for trans

**Answer: C**

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**36.** Assertion : N,N-Diethylethanamine is more basic than  
N,N-Dimethylmethanamine

Reason : +I effect of ethyl is more than methyl

A. (1) If both assertion and reason are true and reason  
is the correct explanation of assertion.

B. If both assertion and reason are true but reason is  
not the correct explanation of assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false.

**Answer: A**

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**37.** Assertion : Bakelite is formed when novalac is heated with formaldehyde and it is a thermosetting polymer.

Reason : Bakelite is an infusible solid mass

A. If both assertion and reason are true and reason is the correct explanation of assertion.

- B. If both assertion and reason are true but reason is not the correct explanation of assertion.
- C. If assertion is true but reason is false.
- D. If both assertion and reason are false.

**Answer: A**

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**38.** Assertion : 2,4-Dimethyl hex-2-ene has 4 stereoisomer

Reason : It show geometrical isomerism

- A. If both assertion and reason are true and reason is the correct explanation of assertion.

B. If both assertion and reason are true but reason is not the correct explanation of assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false.

**Answer: D**



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**39.** Assertion : Ortho nitro phenol is more acidic than meta nitro phenol

Reason : Ortho nitro phenol has more  $-I$  effect than meta nitro phenol

- A. If both assertion and reason are true and reason is the correct explanation of assertion.
- B. If both assertion and reason are true but reason is not the correct explanation of assertion.
- C. If assertion is true but reason is false.
- D. If both assertion and reason are false.

**Answer: B**



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**40.** Assertion : Reverse current flows in charging of lead storage battery:

Reason : During charging  $PbSO_4$  convert into Pb and  $PbO_2$

- A. If both assertion and reason are true and reason is the correct explanation of assertion.
- B. If both assertion and reason are true but reason is not the correct explanation of assertion.
- C. If assertion is true but reason is false.
- D. If both assertion and reason are false.

**Answer: A**



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41. Assertion :  $[Cr(H_2O)_2]^{-2} \rightarrow [Cr(H_2O)_6]^{+2}$  while converthing, colour continuoulsy changes.

Reason: CFSE is increases during change.

- A. If both assertion and reason are true and reason is the correct explanation of assertion.
- B. If both assertion and reason are true but reason is not the correct explanation of assertion.
- C. If assertion is true but reason is false.
- D. If both assertion and reason are false.

**Answer: B**

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**42.** Assertion: When ideal gas expand from  $P_1, V_1, T_1$ , to  $P_2, V_2, T_2$  two steps, and work done is high in which number of steps are high

Reason: Work is path function

- A. If both assertion and reason are true and reason is the correct explanation of assertion.
- B. If both assertion and reason are true but reason is not the correct explanation of assertion.
- C. If assertion is true but reason is false.
- D. If both assertion and reason are false.

**Answer: B**



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**43.** Assertion : On passing electric current in colloidal solution they do not move towards anode or cathode.

Reason: They do not contain any charge

A. If both assertion and reason are true and reason is the correct explanation of assertion.

B. If both assertion and reason are true but reason is not the correct explanation of assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false.

**Answer: D**



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**44.** Assertion :  $Pb_2O_4$  react with  $HNO_2$  and form  $PbO_2$

Reason: Lead is stable in +4 oxidation state.

- A. If both assertion and reason are true and reason is the correct explanation of assertion.
- B. If both assertion and reason are true but reason is not the correct explanation of assertion.
- C. If assertion is true but reason is false.
- D. If both assertion and reason are false.

**Answer: C**



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**45.** Assertion : N, N-Diethyl ethanamine is more basic than N, N-Dimethyl methanamine.

Reason : +I effect of ethyl group is more than methyl

A. If both assertion and reason are true and reason is the correct explanation of assertion.

B. If both assertion and reason are true but reason is not the correct explanation of assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false.

**Answer: A**

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