

Roll. No.

Question Booklet Number

O.M.R. Serial No.

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B.Sc. (SEM.-V) (NEP) (SUPPLE.) EXAMINATION, 2024-25

CHEMISTRY

(Organic Synthesis-A)

Paper Code

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Question Booklet
Series

A

Time : 1 : 30 Hours

Max. Marks : 75

Instructions to the Examinee :

1. Do not open the booklet unless you are asked to do so.
2. The booklet contains 100 questions. Examinee is required to answer 75 questions in the OMR Answer-Sheet provided and not in the question booklet. All questions carry equal marks.
3. Examine the Booklet and the OMR Answer-Sheet very carefully before you proceed. Faulty question booklet due to missing or duplicate pages/questions or having any other discrepancy should be got immediately replaced.
4. Four alternative answers are mentioned for each question as - A, B, C & D in the booklet. The candidate has to choose the correct / answer and mark the same in the OMR Answer-Sheet as per the direction :

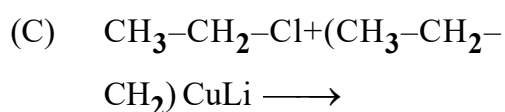
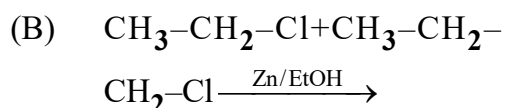
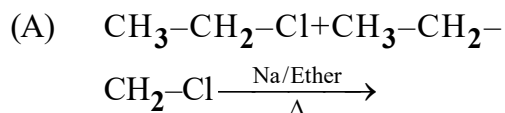
(Remaining instructions on last page)

परीक्षार्थियों के लिए निर्देश :

1. प्रश्न-पुस्तिका को तब तक न खोलें जब तक आपसे कहा न जाए।
2. प्रश्न-पुस्तिका में 100 प्रश्न हैं। परीक्षार्थी को 75 प्रश्नों को केवल दी गई OMR आन्सर-शीट पर ही हल करना है, प्रश्न-पुस्तिका पर नहीं। सभी प्रश्नों के अंक समान हैं।
3. प्रश्नों के उत्तर अंकित करने से पूर्व प्रश्न-पुस्तिका तथा OMR आन्सर-शीट को सावधानीपूर्वक देख लें। दोषपूर्ण प्रश्न-पुस्तिका जिसमें कुछ भाग छपने से छूट गए हों या प्रश्न एक से अधिक बार छप गए हों या उसमें किसी अन्य प्रकार की कमी हो, उसे तुरन्त बदल लें।
4. प्रश्न-पुस्तिका में प्रत्येक प्रश्न के चार सम्भावित उत्तर- A, B, C एवं D हैं। परीक्षार्थी को उन चारों विकल्पों में से सही उत्तर छानना है। उत्तर को OMR उत्तर-पत्रक में सम्बन्धित प्रश्न संख्या में निम्न प्रकार भरना है :

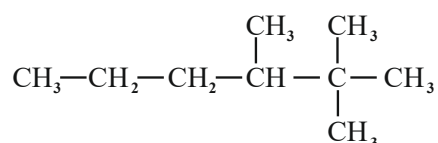
(शेष निर्देश अन्तिम पृष्ठ पर)

1. Which one among the following reactions give only one alkane?



(D) All of the above

2. Number of primary carbons present in the given compound is :



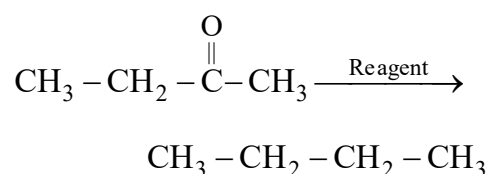
(A) Five

(B) Four

(C) Nine

(D) Two

3. For the given reaction, the reagent is :



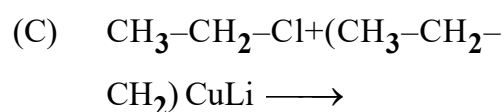
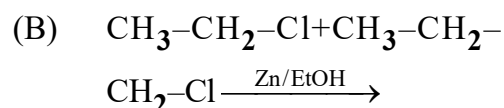
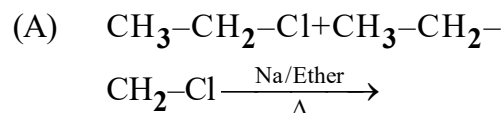
(A) Only $\text{NH}_2\text{—NH}_2$ /Base

(B) Only Zn/Hg/Conc. HCl

(C) Both (A) and (B)

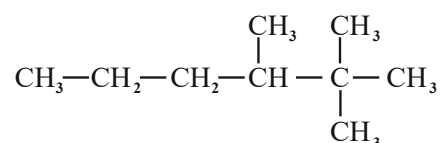
(D) Bu_3SnH

1. निम्नलिखित में से कौन-सी अभिक्रिया केवल एक एल्केन देती है?



(D) उपरोक्त सभी

2. दिये गये कार्बनिक यौगिक में मौजूद प्राथमिक कार्बन की संख्या है :



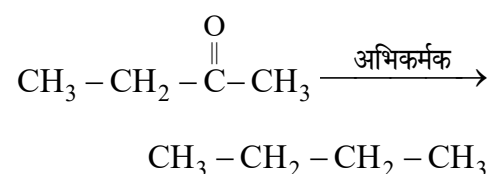
(A) पाँच

(B) चार

(C) नौ

(D) दो

3. दी गयी अभिक्रिया के लिए अभिकर्मक है :



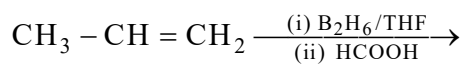
(A) केवल $\text{NH}_2\text{—NH}_2$ /क्षार

(B) केवल Zn/Hg/Conc. HCl

(C) दोनों (A) और (B)

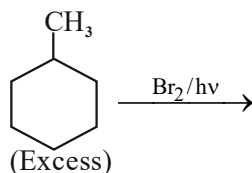
(D) Bu_3SnH

4. The product of the given reaction is :



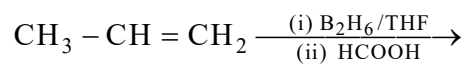
- (A) $\text{H}_3\text{C} - \underset{\text{OH}}{\text{CH}} - \text{CH}_3$
 (B) $\text{CH}_3 - \text{CH}_2 - \text{CH}_2\text{OH}$
 (C) $\text{CH}_3 - \text{C} \equiv \text{CH}$
 (D) $\text{CH}_3 - \text{CH}_2 - \text{CH}_3$

5. In the given reaction the major product is :



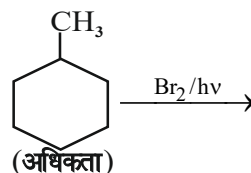
- (A)
- (B)
- (C)
- (D)

4. दी गयी अभिक्रिया का उत्पाद है :



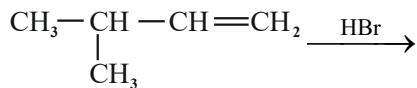
- (A) $\text{H}_3\text{C} - \underset{\text{OH}}{\text{CH}} - \text{CH}_3$
 (B) $\text{CH}_3 - \text{CH}_2 - \text{CH}_2\text{OH}$
 (C) $\text{CH}_3 - \text{C} \equiv \text{CH}$
 (D) $\text{CH}_3 - \text{CH}_2 - \text{CH}_3$

5. दी गयी अभिक्रिया में प्रमुख उत्पाद है :



- (A)
- (B)
- (C)
- (D)

6. In the given reaction the major product is :

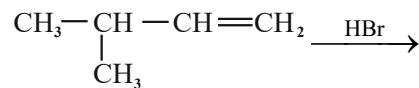


- (A) $\text{CH}_3-\underset{\text{CH}_3}{\text{CH}}-\overset{\text{Br}}{\text{CH}}-\text{CH}_3$
- (B) $\text{CH}_3-\underset{\text{CH}_3}{\text{CH}}-\text{CH}_2-\text{CH}_2-\text{Br}$
- (C) $\text{CH}_3-\overset{\text{Br}}{\text{C}}(\text{CH}_3)-\text{CH}_2-\text{CH}_3$
- (D) $\text{CH}_3-\overset{\text{Br}}{\text{C}}(\text{CH}_3)-\text{CH}=\text{CH}_2$

7. Which one of the following gives anti-Markovnikov product with HCl?

- (I) $\text{CH}_2=\text{CH}-\text{CF}_3$
- (II) $\text{CH}_2=\text{CH}-\text{CCl}_3$
- (III) $\text{CH}_2=\text{CH}-\text{NO}_2$
- (IV) $\text{CH}_2=\text{CH}-\text{C}_6\text{H}_5$
- (A) (I) and (II)
- (B) (I) and (III)
- (C) (II), (III) and (IV)
- (D) (I), (II) and (III)

6. दी गयी अभिक्रिया में प्रमुख उत्पाद है :



- (A) $\text{CH}_3-\underset{\text{CH}_3}{\text{CH}}-\overset{\text{Br}}{\text{CH}}-\text{CH}_3$
- (B) $\text{CH}_3-\underset{\text{CH}_3}{\text{CH}}-\text{CH}_2-\text{CH}_2-\text{Br}$
- (C) $\text{CH}_3-\overset{\text{Br}}{\text{C}}(\text{CH}_3)-\text{CH}_2-\text{CH}_3$
- (D) $\text{CH}_3-\overset{\text{Br}}{\text{C}}(\text{CH}_3)-\text{CH}=\text{CH}_2$

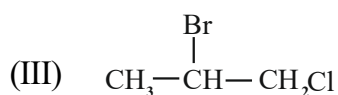
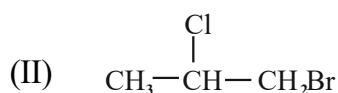
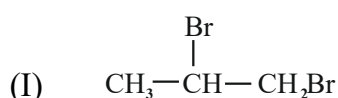
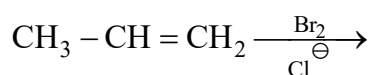
7. निम्नलिखित में से कौन-सा HCl के साथ एन्टी मार्कोनिकोव उत्पाद देता है?

- (I) $\text{CH}_2=\text{CH}-\text{CF}_3$
- (II) $\text{CH}_2=\text{CH}-\text{CCl}_3$
- (III) $\text{CH}_2=\text{CH}-\text{NO}_2$
- (IV) $\text{CH}_2=\text{CH}-\text{C}_6\text{H}_5$
- (A) (I) एवं (II)
- (B) (I) एवं (III)
- (C) (II), (III) एवं (IV)
- (D) (I), (II) एवं (III)

8. In which reaction product formulation takes place via formation of bridge carbocation?

- (A) Hydration of alkane
- (B) Oxymercuration
- (C) Boration
- (D) All of the above

9. The product of the given reaction is :

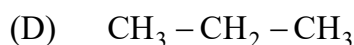
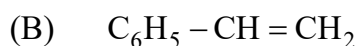
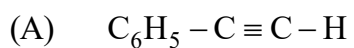


- (A) Only (I)
- (B) Only (II)
- (C) (I) and (II)
- (D) (I) and (III)

10. Hydrogenation of an alkene takes place via formation of which one of these?

- (A) Carbocation
- (B) Bridge carbocation
- (C) Free Radical
- (D) Four-centre cyclic transition state

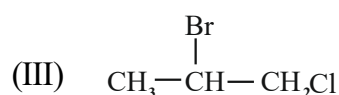
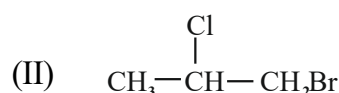
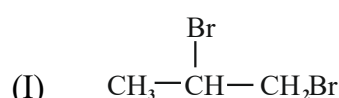
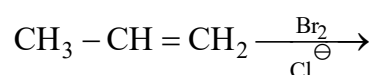
11. Which one of the following is most acidic?



8. जिसमें अभिक्रिया उत्पाद निर्माण ब्रिज कार्बोनेशन निर्माण के माध्यम से होता है?

- (A) एल्कीन का जलयोजन
- (B) ऑक्सीमर्क्युरेशन
- (C) बोरेशन
- (D) उपरोक्त सभी

9. दी गयी अभिक्रिया का उत्पाद है :

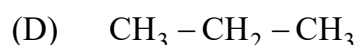
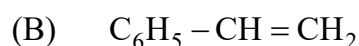
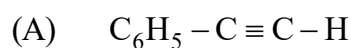


- (A) केवल (I)
- (B) केवल (II)
- (C) (I) एवं (II)
- (D) (I) एवं (III)

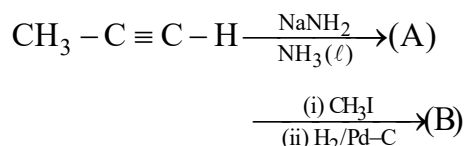
10. एल्कीन का हाइड्रोजनीकरण इनमें से किसके निर्माण के माध्यम से होता है?

- (A) कार्बोनेशन
- (B) ब्रिज कार्बोनेशन
- (C) फ्री रेडिकल
- (D) चार केन्द्र चक्रीय संक्रमण अवस्था

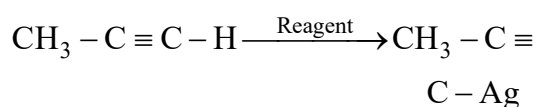
11. निम्नलिखित में से कौन अधिक अम्लीय है?



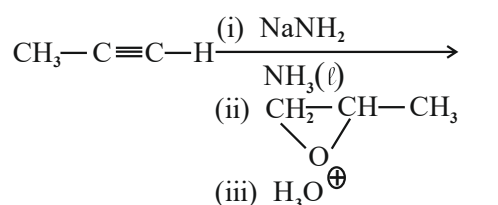
12. The product (B) of the given reaction is :



- (A) Cis-2-butene only
(B) Trans-2-butene only
(C) 1 : 1 mixture of cis and trans-2 butene
(D) None of these
13. For the given reaction, the reagent is

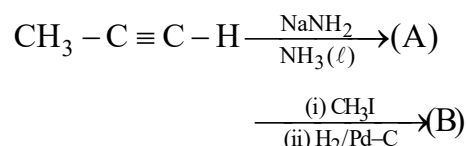


- (A) AgCl/NH₄OH
(B) Ag₂S/NH₄OH
(C) AgBr/NH₄OH
(D) AgNO₃/NH₄OH
14. For the given reaction the product is :

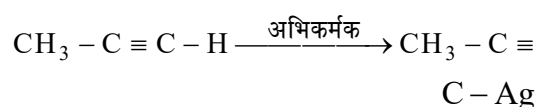


- (A) $\text{CH}_3 - \text{C} \equiv \text{C} - \text{CH} - \text{CH} - \text{OH}$
 $\quad \quad \quad |$
 $\quad \quad \quad \text{OH}$
- (B) $\text{CH}_3 - \text{C} \equiv \text{C} - \text{CH}_2 - \text{CH} - \text{CH}_3$
 $\quad \quad \quad |$
 $\quad \quad \quad \text{OH}$
- (C) $\begin{array}{c} \text{CH}_3 \quad \quad \text{H} \\ \diagdown \quad \diagup \\ \text{C} = \text{C} \\ \diagup \quad \diagdown \\ \text{H} \quad \quad \text{CH}_2 - \text{CH} - \text{CH}_3 \\ \quad \quad | \\ \quad \quad \text{OH} \end{array}$
- (D) $\begin{array}{c} \quad \quad \text{OH} \\ \quad \quad | \\ \text{CH}_3 \quad \quad \text{CH}_2 - \text{CH} - \text{CH}_3 \\ \diagdown \quad \diagup \\ \text{C} = \text{C} \\ \diagup \quad \diagdown \\ \text{H} \quad \quad \text{H} \end{array}$

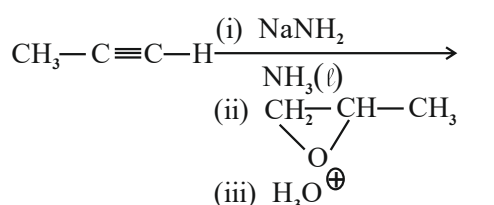
12. दी गयी अभिक्रिया (B) का उत्पाद है :



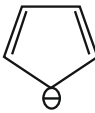
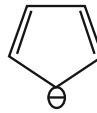
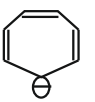
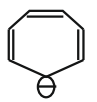
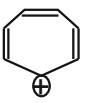
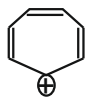
- (A) केवल सिस-2-ब्यूटीन
(B) केवल ट्रांस-2-ब्यूटीन
(C) सिस और ट्रांस-2 ब्यूटीन का 1 : 1 मिश्रण
(D) इनमें से कोई नहीं
13. दी गयी अभिक्रिया के लिए अभिकर्मक है:



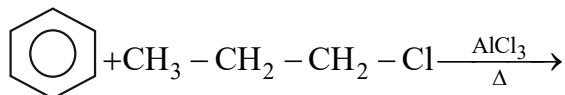
- (A) AgCl/NH₄OH
(B) Ag₂S/NH₄OH
(C) AgBr/NH₄OH
(D) AgNO₃/NH₄OH
14. दी गयी अभिक्रिया के लिए उत्पाद है :



- (A) $\text{CH}_3 - \text{C} \equiv \text{C} - \text{CH} - \text{CH} - \text{OH}$
 $\quad \quad \quad |$
 $\quad \quad \quad \text{OH}$
- (B) $\text{CH}_3 - \text{C} \equiv \text{C} - \text{CH}_2 - \text{CH} - \text{CH}_3$
 $\quad \quad \quad |$
 $\quad \quad \quad \text{OH}$
- (C) $\begin{array}{c} \text{CH}_3 \quad \quad \text{H} \\ \diagdown \quad \diagup \\ \text{C} = \text{C} \\ \diagup \quad \diagdown \\ \text{H} \quad \quad \text{CH}_2 - \text{CH} - \text{CH}_3 \\ \quad \quad | \\ \quad \quad \text{OH} \end{array}$
- (D) $\begin{array}{c} \quad \quad \text{OH} \\ \quad \quad | \\ \text{CH}_3 \quad \quad \text{CH}_2 - \text{CH} - \text{CH}_3 \\ \diagdown \quad \diagup \\ \text{C} = \text{C} \\ \diagup \quad \diagdown \\ \text{H} \quad \quad \text{H} \end{array}$

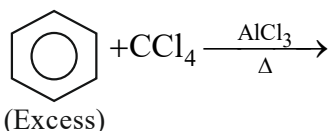
15. On Birch reduction of 2-butyne gives: 15. 2-ब्यूटाइन के बर्च अपचयन पर प्राप्त :
- (A) Cis-2-butene (A) सिस-2-ब्यूटीन
(B) Trans-2-butene (B) ट्रांस-2-ब्यूटीन
(C) 1:1 mixture of (A) and (B) (C) (A) और (B) का 1:1 मिश्रण
(D) None of these (D) इनमें से कोई नहीं
16. Which of these are aromatic in character? 16. इनमें से कौन-सा सुगंधित प्रकृति का है?
- (I)  (I) 
(II)  (II) 
(III)  (III) 
(IV)  (IV) 
- (A) (I) and (II) (A) (I) और (II)
(B) (I) and (III) (B) (I) और (III)
(C) (I), (II) and (IV) (C) (I), (II) और (IV)
(D) (I), (II), (III) and (IV) (D) (I), (II), (III) और (IV)
17. Which of these can be used as nitrating agent for the nitration of benzene? 17. इनमें से किसका उपयोग बेंजीन के लिये नाइट्रेटिंग एजेंट के रूप में किया जा सकता है?
- (I) Conc. HNO_3 + Conc. H_2SO_4 (I) सांद्र HNO_3 + सांद्र H_2SO_4
(II) NO_2ClO_4 (II) NO_2ClO_4
(III) NO_2BF_4 (III) NO_2BF_4
(A) Only (I) (A) केवल (I)
(B) (I) and (II) (B) (I) और (II)
(C) (II) and (III) (C) (II) और (III)
(D) (I), (II) and (III) (D) (I), (II) और (III)

18. The major product of the given reaction is :



- (A) $\text{C}_6\text{H}_5 - \text{CH}_2 - \text{CH}_2 - \text{CH}_3$
 (B) $\text{C}_6\text{H}_5 - \text{CH} \begin{matrix} \text{CH}_3 \\ \text{CH}_3 \end{matrix}$
 (C) 1 : 1 mixture of (A) and (B)
 (D) None of these

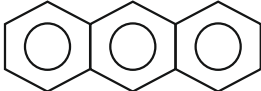
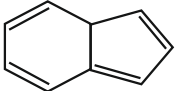
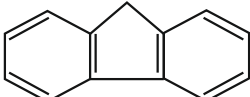
19. In the given reaction



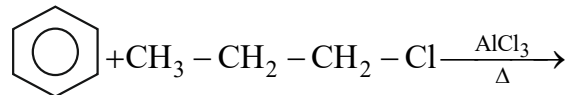
the product is :

- (A) $\text{C}_6\text{H}_5 - \text{CCl}_3$
 (B) $(\text{C}_6\text{H}_5)_2 \text{CCl}_2$
 (C) $(\text{C}_6\text{H}_5)_3 \text{CCl}$
 (D) $(\text{C}_6\text{H}_5)_4 \text{Cl}$

20. The formula/structure of Anthracene is:

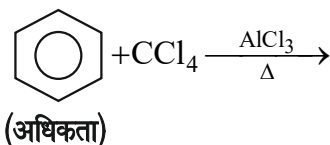
- (A) 
 (B) 
 (C) 
 (D) 

18. दी गयी अभिक्रिया का मुख्य उत्पाद है :



- (A) $\text{C}_6\text{H}_5 - \text{CH}_2 - \text{CH}_2 - \text{CH}_3$
 (B) $\text{C}_6\text{H}_5 - \text{CH} \begin{matrix} \text{CH}_3 \\ \text{CH}_3 \end{matrix}$
 (C) (A) और (B) का 1 : 1 मिश्रण
 (D) इनमें से कोई नहीं

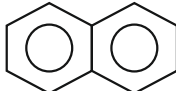
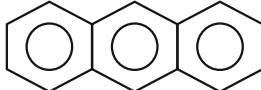
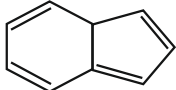
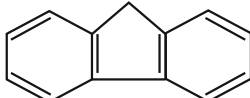
19. दी गयी अभिक्रिया



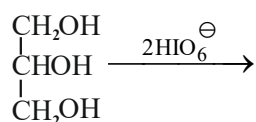
में उत्पाद है :

- (A) $\text{C}_6\text{H}_5 - \text{CCl}_3$
 (B) $(\text{C}_6\text{H}_5)_2 \text{CCl}_2$
 (C) $(\text{C}_6\text{H}_5)_3 \text{CCl}$
 (D) $(\text{C}_6\text{H}_5)_4 \text{Cl}$

20. एन्थ्रासीन की संरचना है :

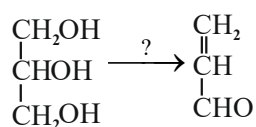
- (A) 
 (B) 
 (C) 
 (D) 

21. In the given reaction the product is :



- (A) $2\text{HCHO} + \text{HCOOH}$
 (B) $2\text{HCOOH} + \text{HCHO}$
 (C) Only 3HCOOH
 (D) Only 3HCHO

22. In the given reaction the reagent is :

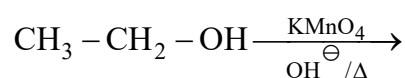


- (A) $\text{H}_2\text{SO}_4 / 10^\circ\text{C}$
 (B) KHSO_4 / Δ
 (C) ZnCl_2 / Δ
 (D) $\text{KMnO}_4 / \text{OH}^\ominus$

23. Jones reagent is :

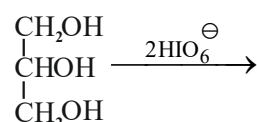
- (A) $\text{KHSO}_4 / \Delta / \text{HOH}$
 (B) $\text{CrO}_3 / \text{HOH} / \text{H}_2\text{SO}_4$
 (C) $\text{PDC} / \text{CH}_2\text{Cl}_2 / \Delta$
 (D) $\text{KHSO}_4 / \text{CH}_2\text{Cl}_2$

24. In the given reaction the product is:



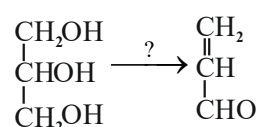
- (A) CH_3CHO
 (B) CH_3COOH
 (C) $\text{CH}_3 - \text{CO} - \text{CH}_3$
 (D) $\text{CH}_3 - \text{O} - \text{CH}_3$

21. दी गयी अभिक्रिया में उत्पाद है :



- (A) $2\text{HCHO} + \text{HCOOH}$
 (B) $2\text{HCOOH} + \text{HCHO}$
 (C) केवल 3HCOOH
 (D) केवल 3HCHO

22. दी गयी अभिक्रिया में अभिकर्मक है :

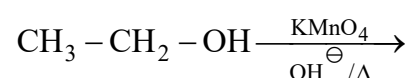


- (A) $\text{H}_2\text{SO}_4 / 10^\circ\text{C}$
 (B) KHSO_3 / Δ
 (C) ZnCl_2 / Δ
 (D) $\text{KMnO}_4 / \text{OH}^\ominus$

23. जोन्स अभिकर्मक है :

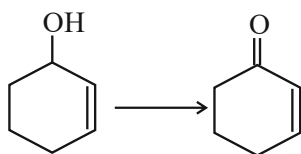
- (A) $\text{KHSO}_4 / \Delta / \text{HOH}$
 (B) $\text{CrO}_3 / \text{HOH} / \text{H}_2\text{SO}_4$
 (C) $\text{PDC} / \text{CH}_2\text{Cl}_2 / \Delta$
 (D) $\text{KHSO}_4 / \text{CH}_2\text{Cl}_2$

24. दी गयी अभिक्रिया में उत्पाद है :



- (A) CH_3CHO
 (B) CH_3COOH
 (C) $\text{CH}_3 - \text{CO} - \text{CH}_3$
 (D) $\text{CH}_3 - \text{O} - \text{CH}_3$

25. In the given reaction the reagent is used :



- (A) PDC / CH_2Cl_2 / 25°C
 (B) PCC / CH_2Cl_2 / 25°C
 (C) CrO_3 / HOH / Δ
 (D) H_2SO_4 / H_3O^+

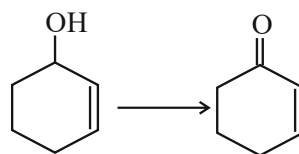
26. Which one of the following alcohols does not react with sodium metal?

- (A) $\text{CH}_3 - \text{OH}$
 (B) $\begin{array}{c} \text{OH} \\ | \\ \text{CH}_3 - \text{C} - \text{CH}_3 \\ | \\ \text{CH}_3 \end{array}$
 (C) $\text{CH}_3 - \text{CH}_2 - \text{OH}$
 (D) $\text{C}_6\text{H}_5 - \text{CH}_2 - \text{OH}$

27. The structure of Resorcinol is :

- (A)
- (B)
- (C)
- (D)

25. दी गयी अभिक्रिया में उपयोग किया गया अभिकर्मक है :



- (A) PDC / CH_2Cl_2 / 25°C
 (B) PCC / CH_2Cl_2 / 25°C
 (C) CrO_3 / HOH / Δ
 (D) H_2SO_4 / H_3O^+

26. निम्नलिखित में से कौन-सा अल्कोहल सोडियम धातु के साथ अभिक्रिया नहीं करता है?

- (A) $\text{CH}_3 - \text{OH}$
 (B) $\begin{array}{c} \text{OH} \\ | \\ \text{CH}_3 - \text{C} - \text{CH}_3 \\ | \\ \text{CH}_3 \end{array}$
 (C) $\text{CH}_3 - \text{CH}_2 - \text{OH}$
 (D) $\text{C}_6\text{H}_5 - \text{CH}_2 - \text{OH}$

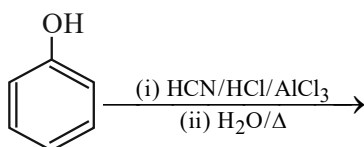
27. रिसॉर्सिनॉल की संरचना है :

- (A)
- (B)
- (C)
- (D)

28. In Gattermann reaction the reagent is used:

- (A) (i) $\text{HCN} / \text{HCl} / \text{AlCl}_3$
(ii) $\text{H}_2\text{O} / \Delta$
- (B) Anhydrous AlCl_3 / Δ
- (C) Both (A) and (B)
- (D) None of these

29. In the given reaction the product is :

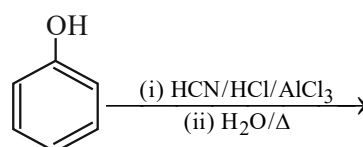


- (A)
- (B)
- (C)
- (D)

28. गाटरमान अभिक्रिया में उपयोगी अभिकर्मक है:

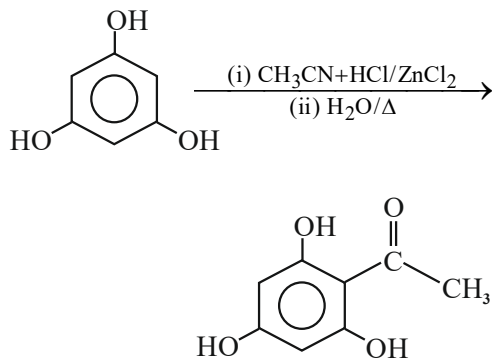
- (A) (i) $\text{HCN} / \text{HCl} / \text{AlCl}_3$
(ii) $\text{H}_2\text{O} / \Delta$
- (B) निर्जल AlCl_3 / Δ
- (C) दोनों (A) और (B)
- (D) इनमें से कोई नहीं

29. दी गयी अभिक्रिया का उत्पाद है :



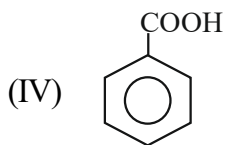
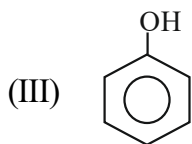
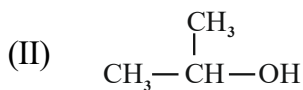
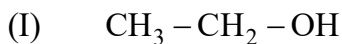
- (A)
- (B)
- (C)
- (D)

30. The name of the given reaction is :



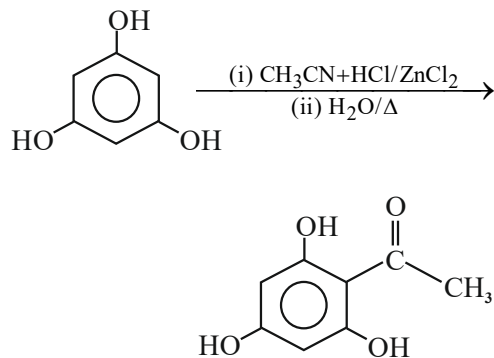
- (A) Houben-Hoesch-reaction
- (B) Gattermann reaction
- (C) Aldol condensation reaction
- (D) Perkin reaction

31. Arrange the following compounds in decreasing order for their acidity :



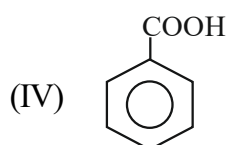
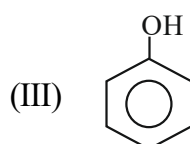
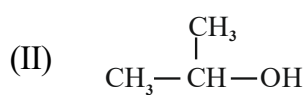
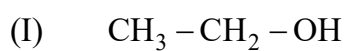
- (A) (IV) > (III) > (I) > (II)
- (B) (IV) > (III) > (II) > (I)
- (C) (I) > (II) > (III) > (IV)
- (D) (III) > (IV) > (I) > (II)

30. दी गयी अभिक्रिया का नाम है :



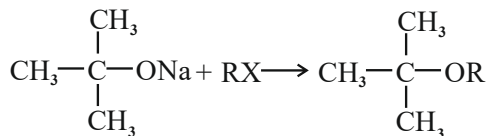
- (A) हौबेन-होएश अभिक्रिया
- (B) गाटरमान अभिक्रिया
- (C) एल्डोल संघनन अभिक्रिया
- (D) पर्किन अभिक्रिया

31. निम्नलिखित यौगिकों को उनके अम्लत्व के घटते क्रम में व्यवस्थित कीजिए :



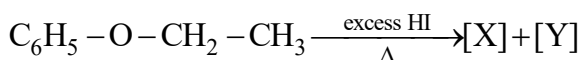
- (A) (IV) > (III) > (I) > (II)
- (B) (IV) > (III) > (II) > (I)
- (C) (I) > (II) > (III) > (IV)
- (D) (III) > (IV) > (I) > (II)

32. In Williamson's ether synthesis given below the alkyl halide is :



- (A) $\text{CH}_3 - \text{X}$
 (B) $\text{C}_6\text{H}_5 - \text{CH}_2 - \text{X}$
 (C) Both (A) and (B)
 (D) $\text{CH}_3 - \text{CH}_2 - \text{X}$

33. In the given reaction



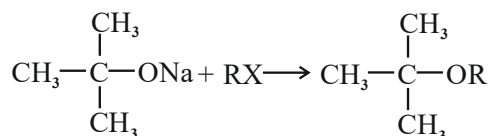
[X] and [Y] will respectively be :

- (A) $\text{C}_6\text{H}_5 - \text{OH}$ and $\text{CH}_3 - \text{CH}_2 - \text{I}$
 (B) $\text{C}_6\text{H}_5 - \text{I}$ and $\text{CH}_3 - \text{CH}_2 - \text{OH}$
 (C) $\text{C}_6\text{H}_5 - \text{I}$ and $\text{CH}_3\text{CH}_2\text{I}$
 (D) $\text{C}_6\text{H}_5\text{OH}$ and $\text{CH}_2 = \text{CH}_2$

34. Which of there will have give oxirane as the product?

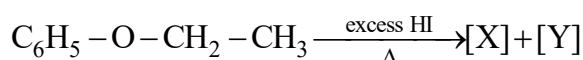
- (A) $\text{Alkene} \xrightarrow[\Delta]{\text{O}_2/\text{Ag}}$
 (B) $\text{Alkene} \xrightarrow{\text{MMPP}}$
 (C) $\text{Alkene} \xrightarrow{\text{PhCOOOH}}$
 (D) All of the above

32. नीचे दिये गए विलियमसन के ईथर संश्लेषण में एल्काइल हैलाइड है :



- (A) $\text{CH}_3 - \text{X}$
 (B) $\text{C}_6\text{H}_5 - \text{CH}_2 - \text{X}$
 (C) दोनों (A) और (B)
 (D) $\text{CH}_3 - \text{CH}_2 - \text{X}$

33. दी गयी अभिक्रिया में



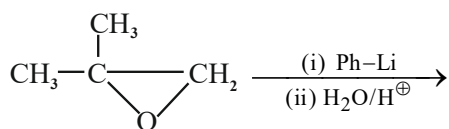
[X] और [Y] क्रमशः होंगे :

- (A) $\text{C}_6\text{H}_5 - \text{OH}$ और $\text{CH}_3 - \text{CH}_2 - \text{I}$
 (B) $\text{C}_6\text{H}_5 - \text{I}$ और $\text{CH}_3 - \text{CH}_2 - \text{OH}$
 (C) $\text{C}_6\text{H}_5 - \text{I}$ और $\text{CH}_3\text{CH}_2\text{I}$
 (D) $\text{C}_6\text{H}_5\text{OH}$ और $\text{CH}_2 = \text{CH}_2$

34. इनमें से कौन-सा उत्पाद ऑक्सीरेन देगा?

- (A) $\text{Alkene} \xrightarrow[\Delta]{\text{O}_2/\text{Ag}}$
 (B) $\text{Alkene} \xrightarrow{\text{MMPP}}$
 (C) $\text{Alkene} \xrightarrow{\text{PhCOOOH}}$
 (D) उपरोक्त सभी

35. In the given reaction the product is :



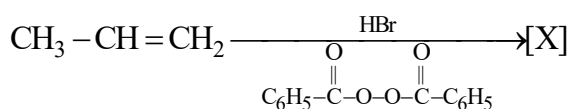
- (A) $\text{CH}_3-\overset{\text{CH}_3}{\underset{\text{OH}}{\text{C}}}-\text{CH}_2-\text{Ph}$
 (B) $\text{CH}_3-\overset{\text{CH}_3}{\underset{\text{Ph}}{\text{C}}}-\text{CH}_2\text{OH}$
 (C) $\text{CH}_3-\overset{\text{OH}}{\text{CH}}-\text{CH}_2-\text{CH}_2-\text{Ph}$
 (D) $\text{CH}_3-\overset{\text{CH}_3}{\text{CH}}-\underset{\text{Ph}}{\text{CH}}-\text{OH}$

36. In the given reaction product is :



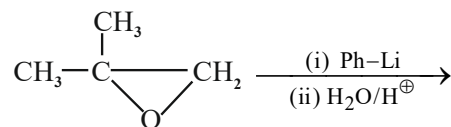
- (A) $\text{CH}_3-\overset{\text{OH}}{\text{CH}}-\text{CH}_3$
 (B) $\text{CH}_3-\text{CH}_2-\text{CH}_2-\text{CH}_3$
 (C) 2-bromopropane
 (D) 1-bromopropane

37. In the given reaction product [X] is :



- (A) $\text{CH}_3-\overset{\text{OH}}{\text{CH}}-\text{CH}_3$
 (B) $\text{CH}_3-\text{CH}_2-\text{CH}_2-\text{CH}_3$
 (C) 1-bromopropane
 (D) 2-bromopropane

35. दी गयी अभिक्रिया में उत्पाद है :



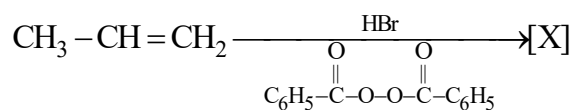
- (A) $\text{CH}_3-\overset{\text{CH}_3}{\underset{\text{OH}}{\text{C}}}-\text{CH}_2-\text{Ph}$
 (B) $\text{CH}_3-\overset{\text{CH}_3}{\underset{\text{Ph}}{\text{C}}}-\text{CH}_2\text{OH}$
 (C) $\text{CH}_3-\overset{\text{OH}}{\text{CH}}-\text{CH}_2-\text{CH}_2-\text{Ph}$
 (D) $\text{CH}_3-\overset{\text{CH}_3}{\text{CH}}-\underset{\text{Ph}}{\text{CH}}-\text{OH}$

36. दी गयी अभिक्रिया में उत्पाद है :



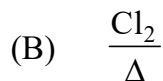
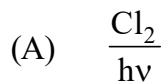
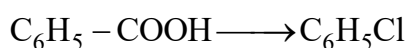
- (A) $\text{CH}_3-\overset{\text{OH}}{\text{CH}}-\text{CH}_3$
 (B) $\text{CH}_3-\text{CH}_2-\text{CH}_2-\text{CH}_3$
 (C) 2-bromopropane
 (D) 1-bromopropane

37. दी गयी अभिक्रिया में उत्पाद [X] है :



- (A) $\text{CH}_3-\overset{\text{OH}}{\text{CH}}-\text{CH}_3$
 (B) $\text{CH}_3-\text{CH}_2-\text{CH}_2-\text{CH}_3$
 (C) 1-bromopropane
 (D) 2-bromopropane

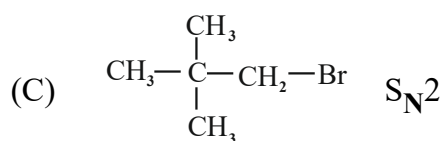
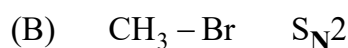
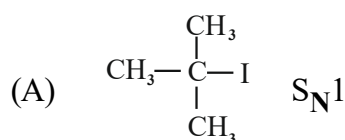
38. For given conversion the reagent is :



(C) (i) AgNO_3 (ii) $\text{Cl}_2 / \text{CCl}_4 / \Delta$

(D) None of these

39. Which one of the following pairs is not correctly matched ?

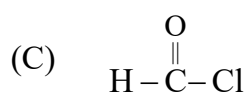


(D) $\text{C}_6\text{H}_5 - \text{CH}_2 - \text{Br} \quad \text{S}_{\text{N}}1$ as well as $\text{S}_{\text{N}}2$

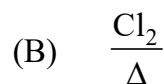
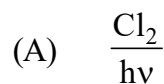
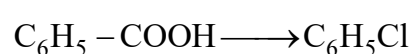
40. Which one of the following is most acidic?



41. Chloroform undergoes aerial oxidation in presence of UV light to give which one of there?



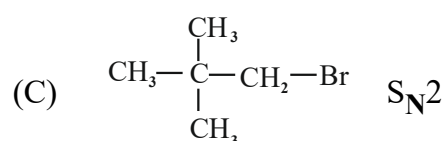
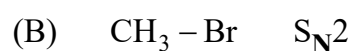
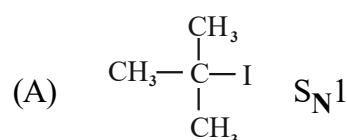
38. दिये गए रूपान्तरण के लिये अभिकर्मक है:



(C) (i) AgNO_3 (ii) $\text{Cl}_2 / \text{CCl}_4 / \Delta$

(D) इनमें से कोई नहीं

39. निम्नलिखित युग्म में से कौन-सा युग्म सही सुमेलित नहीं है?

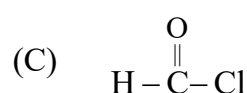


(D) $\text{C}_6\text{H}_5 - \text{CH}_2 - \text{Br} \quad \text{S}_{\text{N}}1$ as well as $\text{S}_{\text{N}}2$

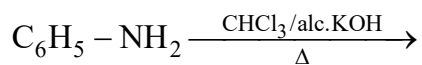
40. निम्नलिखित में से कौन सबसे अधिक अम्लीय है?



41. क्लोरोफॉर्म UV प्रकाश की उपस्थिति में एरियल ऑक्सीकरण से गुजरता है जिससे इनमें से कौन बनता है?

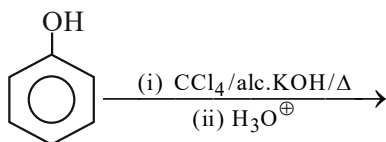


42. The product of the given reaction is :



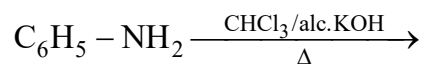
- (A) $\text{C}_6\text{H}_5 - \text{N} = \text{CHCl}$
 (B) $\text{C}_6\text{H}_5 - \text{NC}$
 (C) $\text{C}_6\text{H}_5 - \text{CN}$
 (D) None of these

43. The major product of the given reaction is :



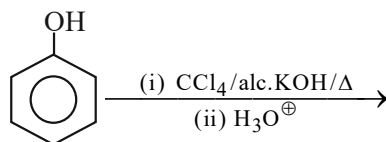
- (A)
- (B)
- (C)
- (D)

42. दी गयी अभिक्रिया का उत्पाद है :



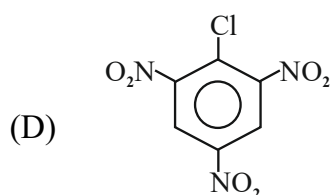
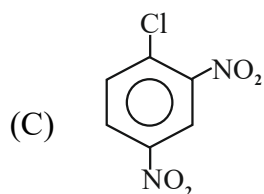
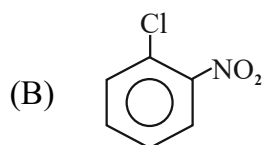
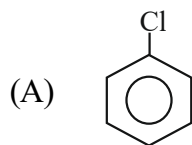
- (A) $\text{C}_6\text{H}_5 - \text{N} = \text{CHCl}$
 (B) $\text{C}_6\text{H}_5 - \text{NC}$
 (C) $\text{C}_6\text{H}_5 - \text{CN}$
 (D) इनमें से कोई नहीं

43. दी गयी अभिक्रिया में मुख्य उत्पाद है :

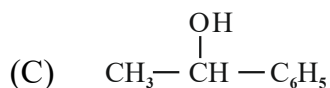
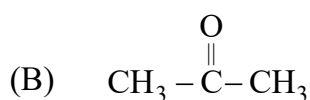
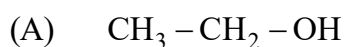


- (A)
- (B)
- (C)
- (D)

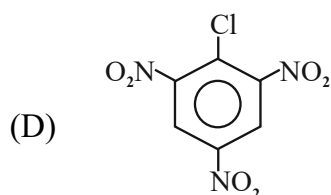
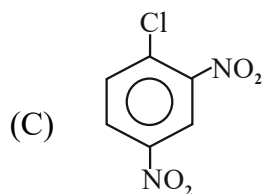
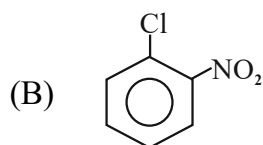
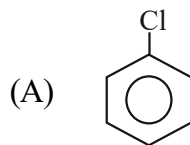
44. Which one of the following is most reactive for aromatic nucleophilic substitution reactions?



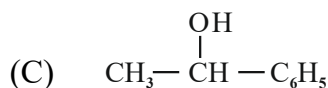
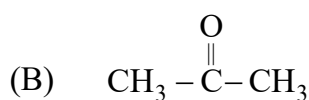
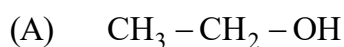
45. Haloform reaction is not given by which one of the following :



44. निम्नलिखित में से कौन-सा एरोमैटिक न्यूक्लियोफिलिक प्रतिस्थापन अभिक्रिया के लिये सबसे अधिक अभिक्रियाशील है?



45. हेलोफॉर्म अभिक्रिया निम्नलिखित में से किसके द्वारा नहीं दी जाती है?



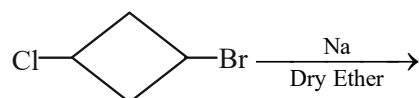
46. Arrange the following cycloalkanes in increasing order of stability:

- (I) Cyclobutane
- (II) Cyclopentane
- (III) Cyclopropane
- (IV) Cyclopentane
- (A) (III) < (I) < (II) < (IV)
- (B) (IV) < (II) < (I) $\approx$ (III)
- (C) (II) < (I) < (II) < (IV)
- (D) (I) < (II) < (III) < (IV)

47. Arrange the following compounds in increasing order of boiling point:

- (I) Pentane
- (II) Cyclopentane
- (III) Cyclopropane
- (A) (II) < (I) < (III)
- (B) (III) < (I) < (II)
- (C) (I) < (II) < (III)
- (D) (I) = (II) < (III)

48. In the given reaction the products is :



- (A)
- (B)
- (C)
- (D)

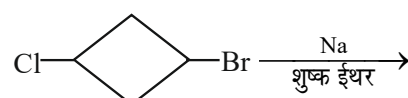
46. निम्नलिखित साइक्लोएल्केन को स्थिरता के बढ़ते क्रम में व्यवस्थित कीजिए:

- (I) साइक्लोब्यूटेन
- (II) साइक्लोपेन्टेन
- (III) साइक्लोप्रोपेन
- (IV) साइक्लोपेन्टेन
- (A) (III) < (I) < (II) < (IV)
- (B) (IV) < (II) < (I) $\approx$ (III)
- (C) (II) < (I) < (II) < (IV)
- (D) (I) < (II) < (III) < (IV)

47. निम्नलिखित यौगिकों को उनके क्वथनांक के अनुसार स्थिरता के बढ़ते क्रम में व्यवस्थित कीजिए :

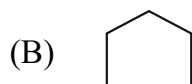
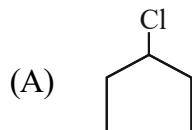
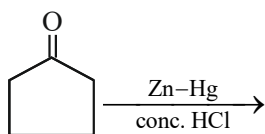
- (I) पेन्टेन
- (II) साइक्लोपेन्टेन
- (III) साइक्लोप्रोपेन
- (A) (II) < (I) < (III)
- (B) (III) < (I) < (II)
- (C) (I) < (II) < (III)
- (D) (I) = (II) < (III)

48. दी गयी अभिक्रिया में उत्पाद है :



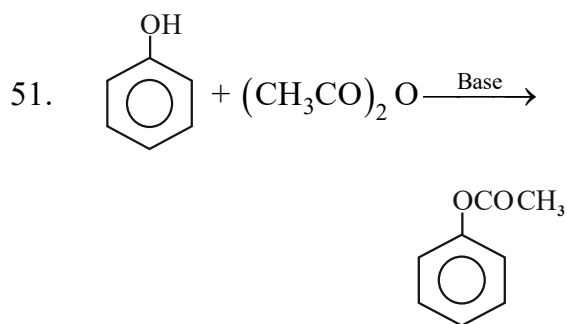
- (A)
- (B)
- (C)
- (D)

49. In the given reaction the products is :



50. The least stable conformers of cyclohexane is :

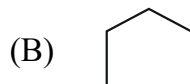
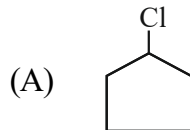
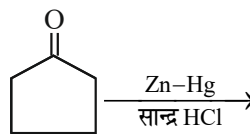
- (A) Chair
- (B) Twist-boat
- (C) Half chair
- (D) Boat



Name of the above reaction is :

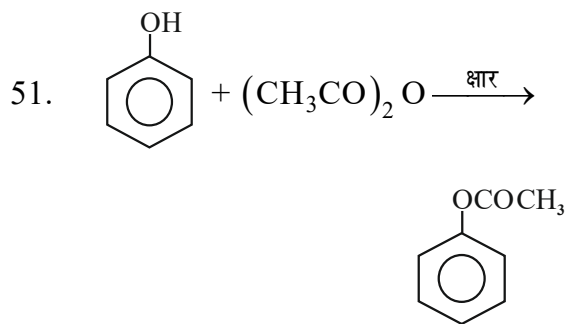
- (A) Esterification
- (B) Acylation
- (C) Both (A) and (B)
- (D) None of these

49. दी गयी अभिक्रिया में उत्पाद है :



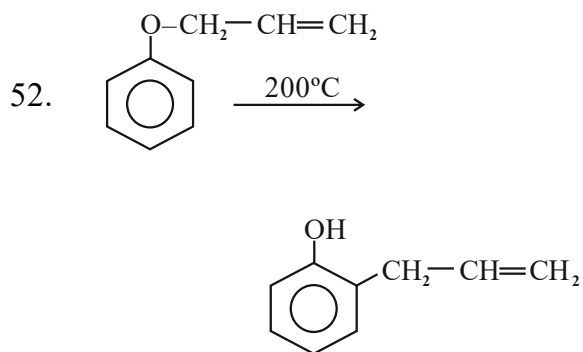
50. साइक्लोहेक्सेन का सबसे कम स्थिर अनुरूप है:

- (A) कुर्सी
- (B) मुड़ी नाव
- (C) आधी कुर्सी
- (D) नाव



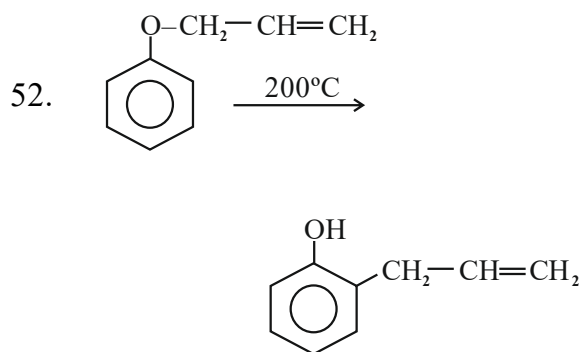
उपरोक्त अभिक्रिया का नाम है :

- (A) एस्टरीकरण
- (B) एसाइलीकरण
- (C) दोनों (A) और (B)
- (D) इनमें से कोई नहीं



Name of the above reaction is :

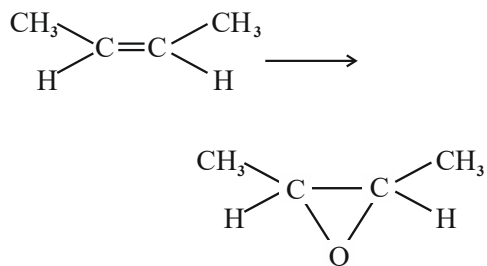
- (A) Claisen rearrangement
- (B) Claisen condensation
- (C) Acylation
- (D) Fries rearrangement



उपरोक्त अभिक्रिया का नाम है :

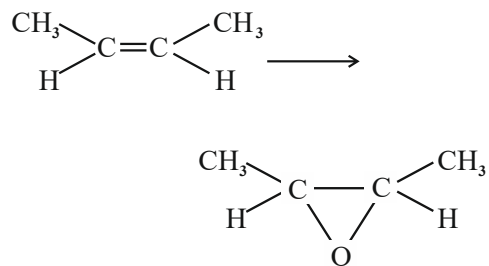
- (A) क्लेसन पुनर्विन्यास
- (B) क्लेसन संघनन
- (C) एसाइलीकरण
- (D) फ्राइस पुनर्विन्यास

53. In the given reaction reagent used :



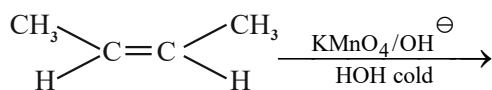
- (A) CF_3COOOH
- (B) CF_3COOH
- (C) $\text{CCl}_4 / \text{H}_2\text{O} / \Delta$
- (D) AlCl_3 / Δ

53. दी गयी अभिक्रिया में अभिकर्मक :

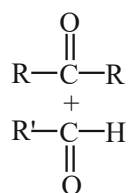
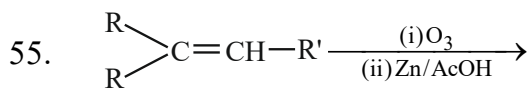


- (A) CF_3COOOH
- (B) CF_3COOH
- (C) $\text{CCl}_4 / \text{H}_2\text{O} / \Delta$
- (D) AlCl_3 / Δ

54. In the given reaction the product is :



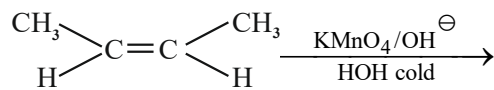
- (A) $\begin{array}{c} \text{CH}_3 \\ | \\ \text{H} - \text{C} - \text{OH} \\ | \\ \text{H} - \text{C} - \text{OH} \\ | \\ \text{CH}_3 \end{array}$
- (B) $\begin{array}{c} \text{CH}_3 \\ | \\ \text{HO} - \text{C} - \text{H} \\ | \\ \text{H} - \text{C} - \text{OH} \\ | \\ \text{CH}_3 \end{array}$
- (C) $\begin{array}{c} \text{H} \\ | \\ \text{HO} - \text{C} - \text{CH}_3 \\ | \\ \text{CH}_3 - \text{C} - \text{OH} \\ | \\ \text{H} \end{array}$
- (D) $\begin{array}{c} \text{OH} \\ | \\ \text{H} - \text{C} - \text{CH}_3 \\ | \\ \text{H} - \text{C} - \text{CH}_3 \\ | \\ \text{OH} \end{array}$



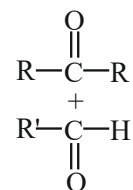
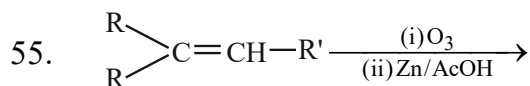
Name of the above reaction is :

- (A) Ozonolysis
(B) Oxidation
(C) Reduction
(D) Oxymercuration

54. दी गयी अभिक्रिया में उत्पाद है :



- (A) $\begin{array}{c} \text{CH}_3 \\ | \\ \text{H} - \text{C} - \text{OH} \\ | \\ \text{H} - \text{C} - \text{OH} \\ | \\ \text{CH}_3 \end{array}$
- (B) $\begin{array}{c} \text{CH}_3 \\ | \\ \text{HO} - \text{C} - \text{H} \\ | \\ \text{H} - \text{C} - \text{OH} \\ | \\ \text{CH}_3 \end{array}$
- (C) $\begin{array}{c} \text{H} \\ | \\ \text{HO} - \text{C} - \text{CH}_3 \\ | \\ \text{CH}_3 - \text{C} - \text{OH} \\ | \\ \text{H} \end{array}$
- (D) $\begin{array}{c} \text{OH} \\ | \\ \text{H} - \text{C} - \text{CH}_3 \\ | \\ \text{H} - \text{C} - \text{CH}_3 \\ | \\ \text{OH} \end{array}$



उपरोक्त अभिक्रिया का नाम है :

- (A) ओजोनीकरण
(B) ऑक्सीकरण
(C) अपचयन
(D) ऑक्सीमरक्युरीकरण

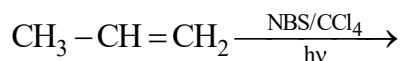
56. Which one of the following cycloalkane is least stable?

- (A) Cyclohexane
(B) Cycloheptane
(C) Cyclobutane
(D) Cyclopropane

57. The relative reactivity for chlorination of 3°, 2° and 1° hydrogen of alkane is as follows :

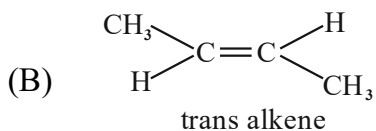
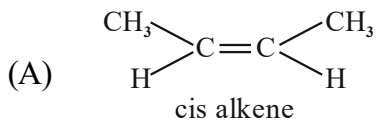
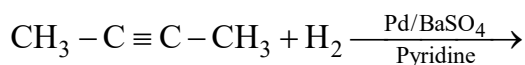
- (A) 5 : 3.8 : 1
(B) 1 : 3.8 : 5
(C) 3.8 : 5 : 1
(D) 5 : 1 : 3.8

58. The product of the given reaction is :



- (A) $\text{CH}_3 - \text{CHBr} - \text{CH}_2\text{Br}$
(B) $\begin{array}{c} \text{CH}_2 - \text{CH} = \text{CH}_2 \\ | \\ \text{Br} \end{array}$
(C) 1 : 1 mixture of (A) and (B)
(D) None of these

59. In the given reaction product is :



- (C) Both (A) and (B)
(D) None of these

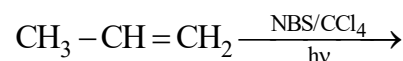
56. निम्नलिखित में से कौन-सा साइक्लोएल्केन सबसे कम स्थायी है?

- (A) साइक्लोहेक्सेन
(B) साइक्लोहेप्टेन
(C) साइक्लोब्यूटेन
(D) साइक्लोप्रोपेन

57. 3°, 2° और 1° हाइड्रोजन एल्केन के क्लोरीनीकरण के लिए सापेक्ष प्रतिक्रियाशीलता निम्नानुसार है :

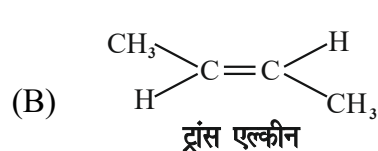
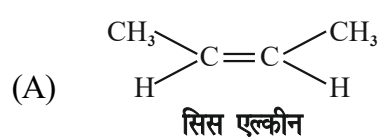
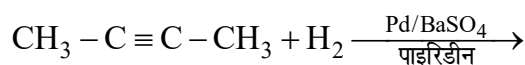
- (A) 5 : 3.8 : 1
(B) 1 : 3.8 : 5
(C) 3.8 : 5 : 1
(D) 5 : 1 : 3.8

58. दी गयी अभिक्रिया का उत्पाद है :



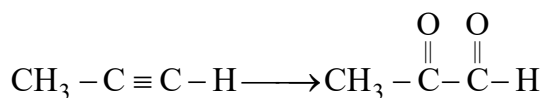
- (A) $\text{CH}_3 - \text{CHBr} - \text{CH}_2\text{Br}$
(B) $\begin{array}{c} \text{CH}_2 - \text{CH} = \text{CH}_2 \\ | \\ \text{Br} \end{array}$
(C) 1 : 1 mixture of (A) and (B)
(D) इनमें से कोई नहीं

59. दी गयी अभिक्रिया का उत्पाद है :



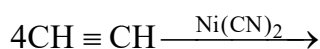
- (C) दोनों (A) और (B)
(D) इनमें से कोई नहीं

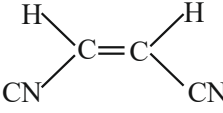
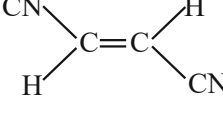
60. In the given reaction, reagent is used :



- (A) SeO_2
 (B) (i) O_3 (ii) $\text{H}_2\text{O} / \text{H}^\oplus$
 (C) Both (A) and (B)
 (D) None of these

61. In the given reaction the product is :



- (A) 
 (B) 
 (C) 
 (D) Both (B) and (C)

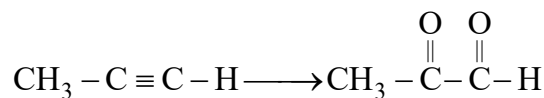
62. Consider the following statements :

- (I) Alkene is more reactive than alkyne for electrophilic addition.
 (II) Alkyne is more reactive than alkene for nucleophilic addition.
 (III) Acetylene is more acidic than ethene
 (IV) 2-Butyne on oxidation with OsO_4 gives acetic acid.

Of these correct statements are :

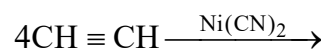
- (A) (I), (II), (III) and (IV)
 (B) (I), (II) and (IV)
 (C) (II), (III) and (IV)
 (D) (I), (II) and (III)

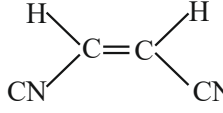
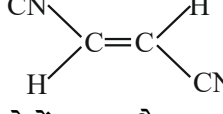
60. दी गयी अभिक्रिया में उपयोगी अभिकर्मक है :



- (A) SeO_2
 (B) (i) O_3 (ii) $\text{H}_2\text{O} / \text{H}^\oplus$
 (C) दोनों (A) और (B)
 (D) इनमें से कोई नहीं

61. दी गयी अभिक्रिया में उत्पाद है :



- (A) 
 (B) 
 (C) 
 (D) दोनों (B) और (C)

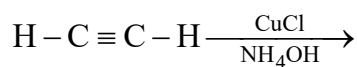
62. निम्नलिखित कथनों पर विचार कीजिए:

- (I) इलेक्ट्रॉनस्नेही योग के लिए एल्कीन, एल्काइन से अधिक अभिक्रियाशील है
 (II) नाभिकस्नेही योग के लिए एल्काइन, एल्कीन से अधिक अभिक्रियाशील है
 (III) एसीलीन एथीन से अधिक अम्लीय है
 (IV) 2-ब्यूटाइन OsO_4 के साथ ऑक्सीकरण पर एसिटिक एसिड देता है

इनमें से सही कथन है :

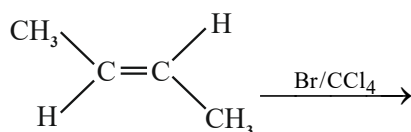
- (A) (I), (II), (III) और (IV)
 (B) (I), (II) और (IV)
 (C) (II), (III) और (IV)
 (D) (I), (II) और (III)

63. The product of the given reaction is :



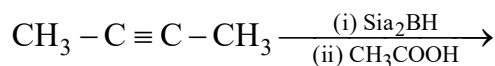
- (A) $\text{CH}_2=\text{CH}-\text{C}\equiv\text{CH}$
 (B) $\text{Cu}-\text{C}\equiv\text{C}-\text{Cu}$
 (C) $\text{Cu}-\text{C}\equiv\text{C}-\text{H}$
 (D) $\text{CH}_3-\text{CH}_2-\text{C}\equiv\text{CH}$

64. In the given reaction the product is :



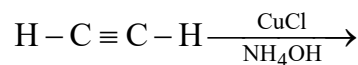
- (A) $\begin{array}{c} \text{CH}_3 \\ | \\ \text{H}-\text{C}-\text{Br} \\ | \\ \text{H}-\text{C}-\text{Br} \\ | \\ \text{CH}_3 \end{array}$
 (B) $\begin{array}{c} \text{CH}_3 \\ | \\ \text{H}-\text{C}-\text{Br} \\ | \\ \text{Br}-\text{C}-\text{H} \\ | \\ \text{CH}_3 \end{array}$
 (C) Both (A) and (B)
 (D) None of these

65. The product of the given reaction is :



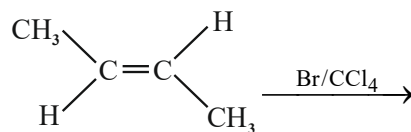
- (A) $\begin{array}{c} \text{CH}_3 \quad \text{CH}_3 \\ \diagdown \quad \diagup \\ \text{C}=\text{C} \\ \diagup \quad \diagdown \\ \text{H} \quad \text{H} \end{array}$
 (B) $\begin{array}{c} \text{CH}_3 \quad \text{H} \\ \diagdown \quad \diagup \\ \text{C}=\text{C} \\ \diagup \quad \diagdown \\ \text{H} \quad \text{CH}_3 \end{array}$
 (C) $\begin{array}{c} \text{CH}_3 \quad \text{CH}_3 \\ \diagdown \quad \diagup \\ \text{C}=\text{C} \\ \diagup \quad \diagdown \\ \text{H} \quad \text{OCOCH}_3 \end{array}$
 (D) $\begin{array}{c} \text{CH}_3 \quad \text{OCOCH}_3 \\ \diagdown \quad \diagup \\ \text{C}=\text{C} \\ \diagup \quad \diagdown \\ \text{H} \quad \text{H} \end{array}$

63. दी गयी अभिक्रिया का उत्पाद है :



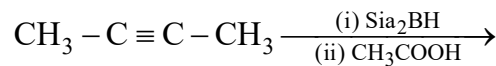
- (A) $\text{CH}_2=\text{CH}-\text{C}\equiv\text{CH}$
 (B) $\text{Cu}-\text{C}\equiv\text{C}-\text{Cu}$
 (C) $\text{Cu}-\text{C}\equiv\text{C}-\text{H}$
 (D) $\text{CH}_3-\text{CH}_2-\text{C}\equiv\text{CH}$

64. दी गयी अभिक्रिया का उत्पाद है :



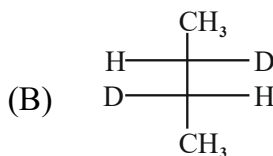
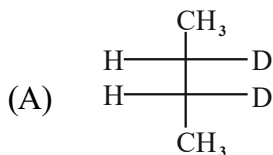
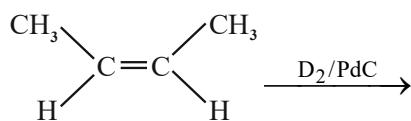
- (A) $\begin{array}{c} \text{CH}_3 \\ | \\ \text{H}-\text{C}-\text{Br} \\ | \\ \text{H}-\text{C}-\text{Br} \\ | \\ \text{CH}_3 \end{array}$
 (B) $\begin{array}{c} \text{CH}_3 \\ | \\ \text{H}-\text{C}-\text{Br} \\ | \\ \text{Br}-\text{C}-\text{H} \\ | \\ \text{CH}_3 \end{array}$
 (C) दोनों (A) और (B)
 (D) इनमें से कोई नहीं

65. दी गयी अभिक्रिया का उत्पाद है :



- (A) $\begin{array}{c} \text{CH}_3 \quad \text{CH}_3 \\ \diagdown \quad \diagup \\ \text{C}=\text{C} \\ \diagup \quad \diagdown \\ \text{H} \quad \text{H} \end{array}$
 (B) $\begin{array}{c} \text{CH}_3 \quad \text{H} \\ \diagdown \quad \diagup \\ \text{C}=\text{C} \\ \diagup \quad \diagdown \\ \text{H} \quad \text{CH}_3 \end{array}$
 (C) $\begin{array}{c} \text{CH}_3 \quad \text{CH}_3 \\ \diagdown \quad \diagup \\ \text{C}=\text{C} \\ \diagup \quad \diagdown \\ \text{H} \quad \text{OCOCH}_3 \end{array}$
 (D) $\begin{array}{c} \text{CH}_3 \quad \text{OCOCH}_3 \\ \diagdown \quad \diagup \\ \text{C}=\text{C} \\ \diagup \quad \diagdown \\ \text{H} \quad \text{H} \end{array}$

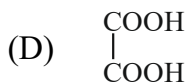
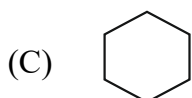
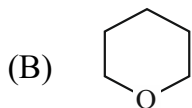
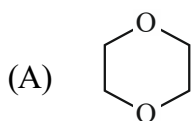
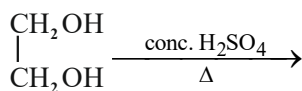
66. Identify the product [P] is :



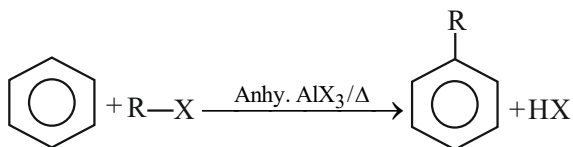
(C) Both (A) and (B)

(D) None of these

67. In the given reaction the product is :



68. Identify name of the given reaction:



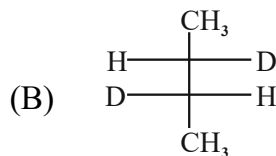
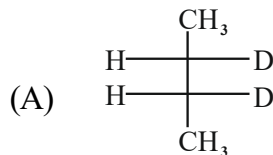
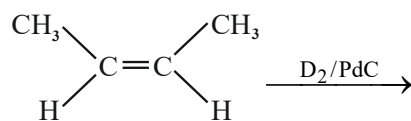
(A) Friedel Craft Alkylation

(B) Friedel Craft Acylation

(C) Halogenation

(D) Hydrogenation

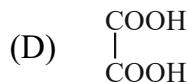
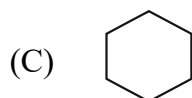
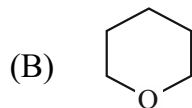
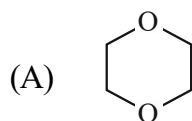
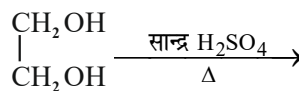
66. उत्पाद [P] की पहचान कीजिए :



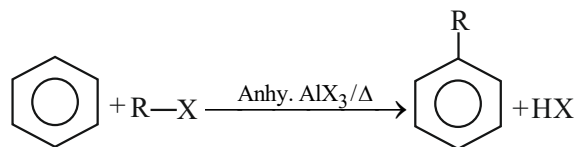
(C) दोनों (A) और (B)

(D) इनमें से कोई नहीं

67. दी गयी अभिक्रिया का उत्पाद है :



68. दी गयी अभिक्रिया का नाम पहचानिए :



(A) फ्रीडल क्रॉफ्ट एल्काइलेसन

(B) फ्रीडल क्रॉफ्ट एसाइलेसन

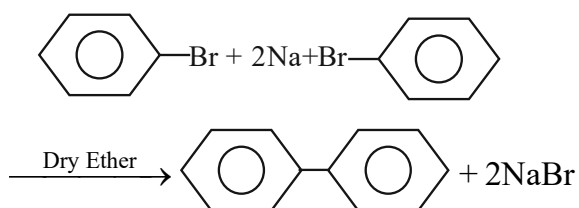
(C) हैलोजनीकरण

(D) हाइड्रोजनीकरण

69. Conversion of toluene into benzaldehyde by chromyl chloride is known as :

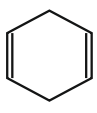
- (A) Friedel Craft reaction
- (B) Etard reaction
- (C) Grignard reaction
- (D) Gattermann reaction

70. This reaction is known as :

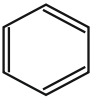


- (A) Wurtz reaction
- (B) Wurtz Fittig reaction
- (C) Fittig reaction
- (D) Friedel Craft reaction

71. Which one is aromatic in nature?

- (A) 
- (B) 
- (C) 
- (D) 

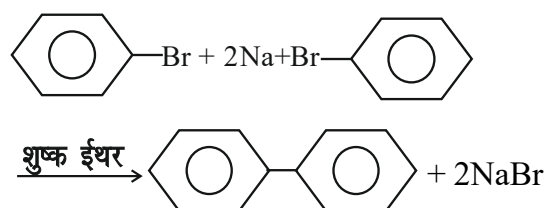
72. Which one is Anti-aromatic in nature?

- (A) 
- (B) 
- (C) 
- (D) 

69. क्रोमिल क्लोराइड द्वारा टॉल्यूइन का बेंजेलल्डिहाइड में रूपान्तरण कहलाता है :

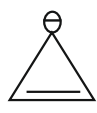
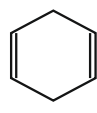
- (A) फ्रीडल क्रॉफ्ट अभिक्रिया
- (B) इटार्ड अभिक्रिया
- (C) ग्रिगनार्ड अभिक्रिया
- (D) गाटरमान अभिक्रिया

70. यह अभिक्रिया कहलाती है :

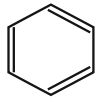


- (A) वुर्ट्ज अभिक्रिया
- (B) वुर्ट्ज-फिटिंग अभिक्रिया
- (C) फिटिंग अभिक्रिया
- (D) फ्रीडल-क्रॉफ्ट अभिक्रिया

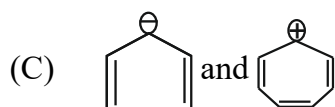
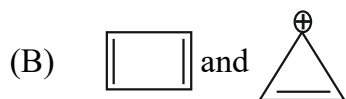
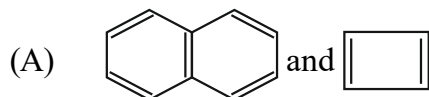
71. कौन-सा प्रकृति में एरोमैटिक है?

- (A) 
- (B) 
- (C) 
- (D) 

72. कौन-सा प्रकृति में एन्टी-एरोमैटिक है?

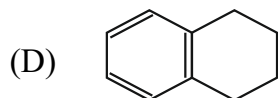
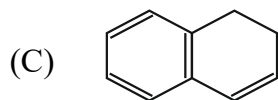
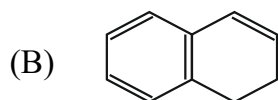
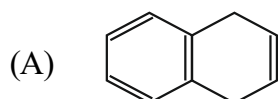
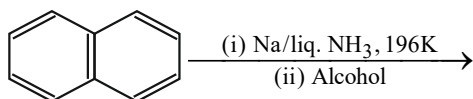
- (A) 
- (B) 
- (C) 
- (D) 

73. Which of the following pair is aromatic in nature?

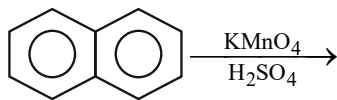


(D) All of the above

74. In the given reaction product is :



75. In the given reaction product is :



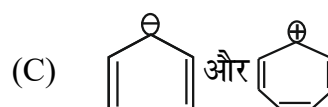
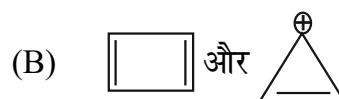
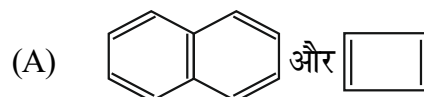
(A) Phthalic acid

(B) Formic acid

(C) Benzene

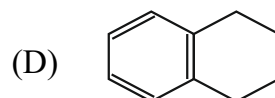
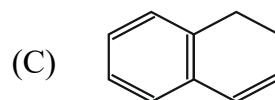
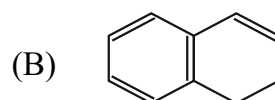
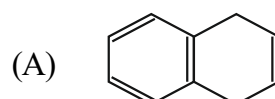
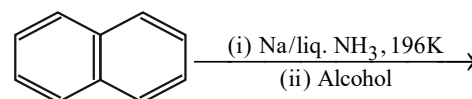
(D) Benzoic acid

73. निम्नलिखित में कौन-सा जोड़ा एरोमैटिक प्रकृति का है?

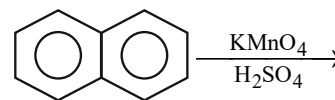


(D) उपरोक्त सभी

74. दी गयी अभिक्रिया में उत्पाद है :



75. दी गयी अभिक्रिया में उत्पाद है :



(A) फैलिक अम्ल

(B) फॉर्मिक अम्ल

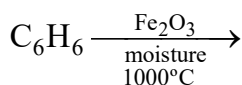
(C) बेन्जीन

(D) बेन्जोइक अम्ल

76. Which among the following is artho, para directing group and deactivating group?

- (I) Cl (II) NO
(III) CH₃ (IV) SO₃
(A) (I) Only
(B) (II) Only
(C) (I) and (II)
(D) (III) and (IV)

77. The product of the given reaction is :

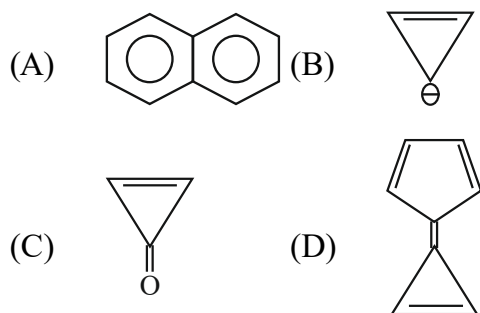


- (A) Biphenyl
(B) Napthalene
(C) Anthracene
(D) None of these

78. For oxidation and addition reactions arrange reactivity of given compounds in decreasing order :

- (I) Benzene
(II) Napthalene
(III) Anthracene
(A) (I) > (II) > (III)
(B) (III) > (II) > (I)
(C) (I) > (III) > (II)
(D) (III) > (I) > (II)

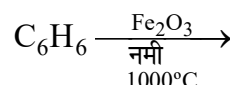
79. Which one of the following is not an aromatic compound?



76. निम्नलिखित में से कौन-सा समूह आर्थो, पैरा, निर्देशक और निष्क्रिय समूह है?

- (I) Cl (II) NO
(III) CH₃ (IV) SO₃
(A) केवल (I)
(B) केवल (II)
(C) (I) और (II)
(D) (III) और (IV)

77. दी गयी अभिक्रिया का उत्पाद है :

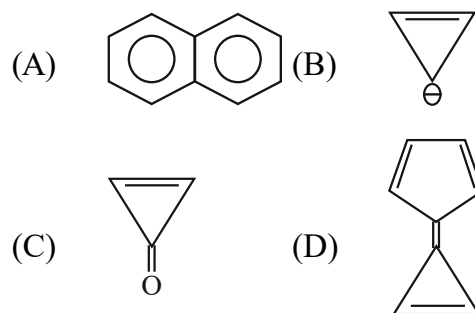


- (A) बाईफेनिल
(B) नेपथलीन
(C) एन्थ्रासीन
(D) इनमें से कोई नहीं

78. ऑक्सीकरण और योगात्मक अभिक्रियाओं के लिए दिये गये यौगिकों की अभिक्रियाशीलता को घटते क्रम में व्यवस्थित कीजिए:

- (I) बेन्जीन
(II) नेपथलीन
(III) एन्थ्रासीन
(A) (I) > (II) > (III)
(B) (III) > (II) > (I)
(C) (I) > (III) > (II)
(D) (III) > (I) > (II)

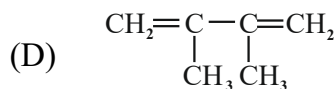
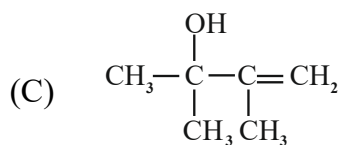
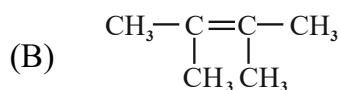
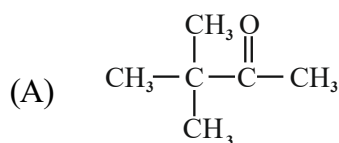
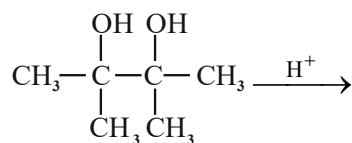
79. निम्नलिखित में से कौन-सा एक एरोमैटिक यौगिक नहीं है?



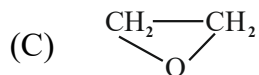
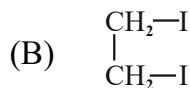
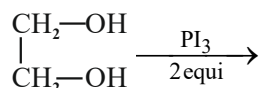
80. The most reactive compound for electrophilic aromatic substitution is:

- (A) Toluene
- (B) Aniline
- (C) Anisole
- (D) Chlorobenzene

81. The product of the given reaction is :



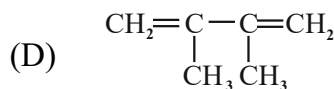
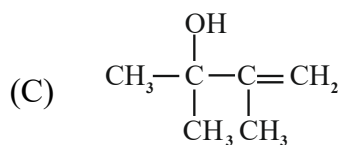
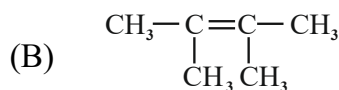
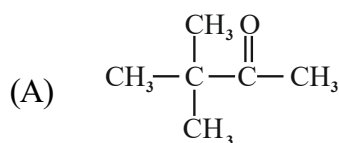
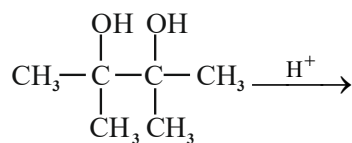
82. The product of the reaction is :



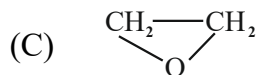
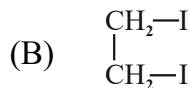
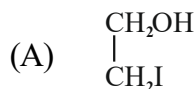
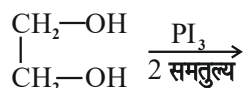
80. इलेक्ट्रॉनसन्धेही एरोमैटिक प्रतिस्थापन के लिये सबसे अधिक अभिक्रियाशील यौगिक है :

- (A) टालुईन
- (B) एनिलीन
- (C) एनिसॉल
- (D) क्लोरोबेन्जीन

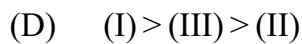
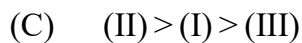
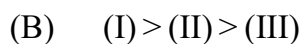
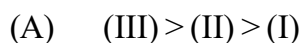
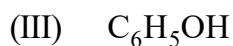
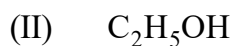
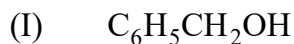
81. दी गयी अभिक्रिया का उत्पाद है :



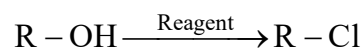
82. दी गयी अभिक्रिया का उत्पाद है :



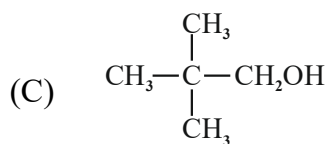
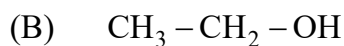
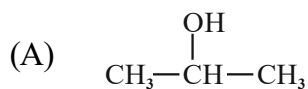
83. Arrange the following in increasing order of their solubility in water :



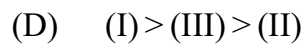
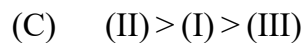
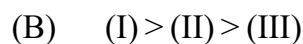
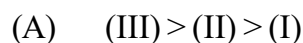
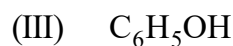
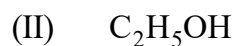
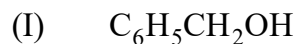
84. For the given reaction the reagent is :



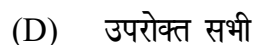
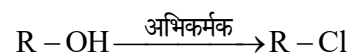
85. In Victor Mayer test which one of the following gives blue colour?



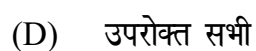
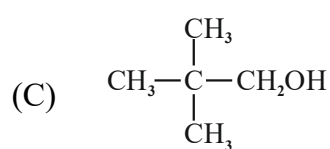
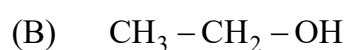
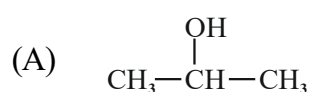
83. निम्नलिखित को जल में उनकी घुलनशीलता के बढ़ते क्रम में व्यवस्थित कीजिए :



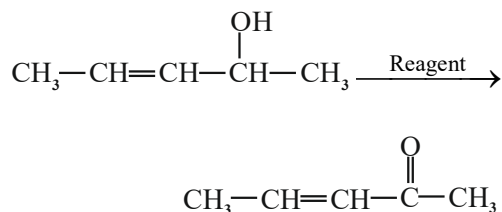
84. दी गयी अभिक्रिया में अभिकर्मक है :



85. निम्नलिखित में कौन विक्टर मेयर परीक्षण में नीला रंग देता है?



86. For the given conversion then reagent is :



- (A) $\text{KMnO}_4 / \text{H}^+$
- (B) $\text{K}_2\text{Cr}_2\text{O}_7 / \text{H}^+$
- (C) $\text{CrO}_3 / \text{HOH} / \text{H}_2\text{SO}_4$
- (D) PCC

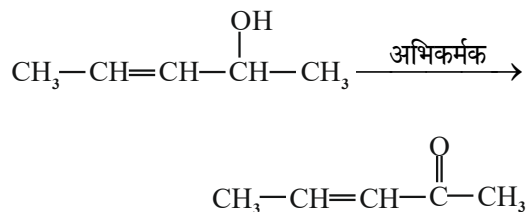
87. One mole of glycol is oxidised to 2 moles of formaldehyde by which oxidising agents?

- (A) NaIO_4 Only
- (B) $\text{Pb}(\text{OAc})_4$ Only
- (C) Both (A) and (B)
- (D) None of these

88. Condensation of phthalic anhydride with phenol in presence of conc. H_2SO_4 gives :

- (A) Phthalic acid
- (B) Benzene
- (C) Phenolphthalein
- (D) Salicyclic acid

86. दिये गये परिवर्तन के लिए अभिकर्मक हैं :



- (A) $\text{KMnO}_4 / \text{H}^+$
- (B) $\text{K}_2\text{Cr}_2\text{O}_7 / \text{H}^+$
- (C) $\text{CrO}_3 / \text{HOH} / \text{H}_2\text{SO}_4$
- (D) PCC

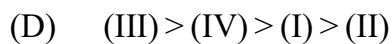
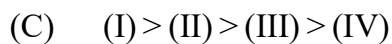
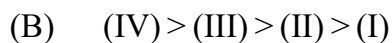
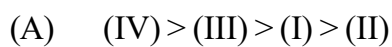
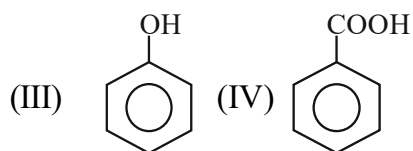
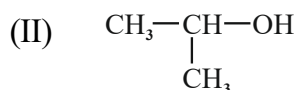
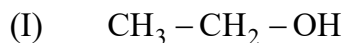
87. किस ऑक्सीकरण एजेंट द्वारा एक मोल ग्लाइकोल को 2 मोल फॉर्मैल्डिहाइड में ऑक्सीकृत किया जाता है?

- (A) केवल NaIO_4
- (B) केवल $\text{Pb}(\text{OAc})_4$
- (C) दोनों (A) और (B)
- (D) इनमें से कोई नहीं

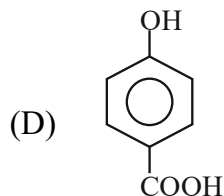
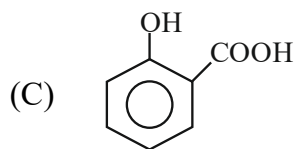
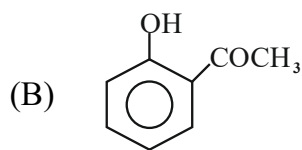
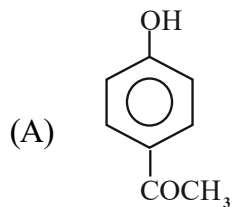
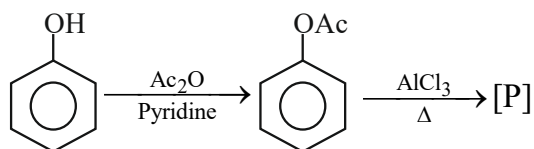
88. सान्द्र H_2SO_4 की उपस्थिति में फिनाल के साथ थैलिक एनहाइड्राइड का संघनन देता है :

- (A) थैलिक अम्ल
- (B) बेंजीन
- (C) फिनालफ्थेलीन
- (D) सैलिसिलिक अम्ल

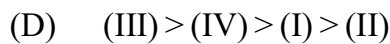
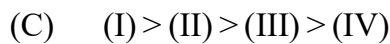
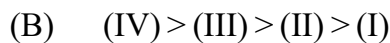
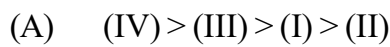
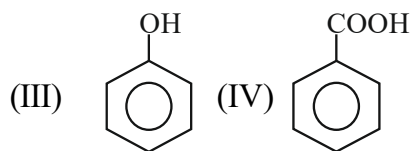
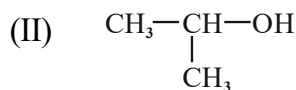
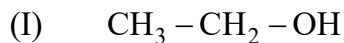
89. Arrange the following compounds in decreasing order for their acidity:



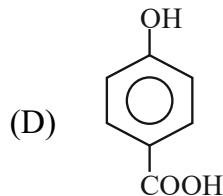
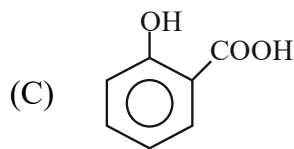
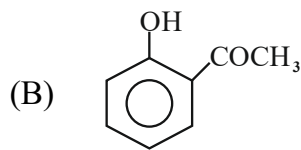
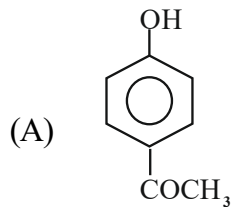
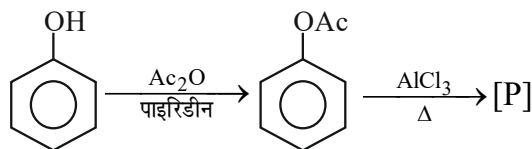
90. Identify the final product [P] :



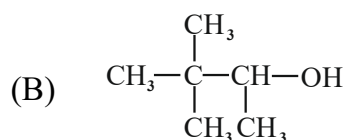
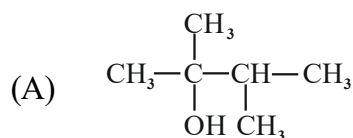
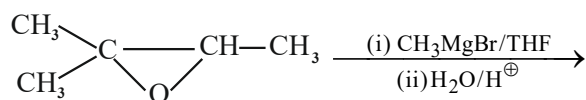
89. निम्नलिखित यौगिकों को उनकी अम्लता के घटते क्रम में व्यवस्थित कीजिए :



90. अन्तिम उत्पाद [P] की पहचान कीजिए :



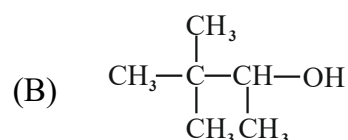
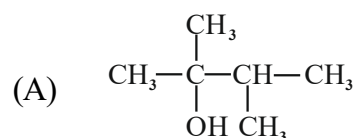
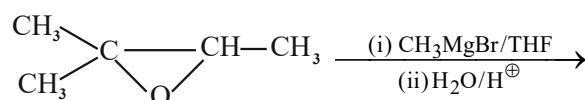
91. In the given reaction the product is :



(C) Both (A) and (B)

(D) None of these

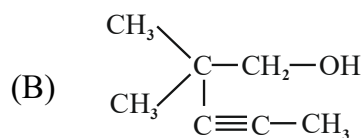
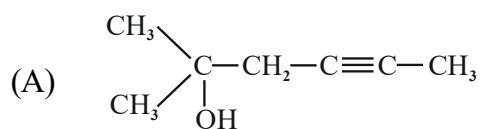
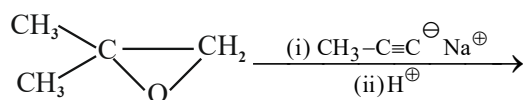
91. दी गयी अभिक्रिया में उत्पाद है :



(C) दोनों (A) और (B)

(D) इनमें से कोई नहीं

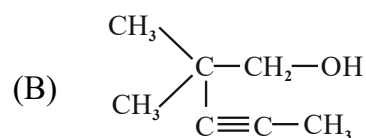
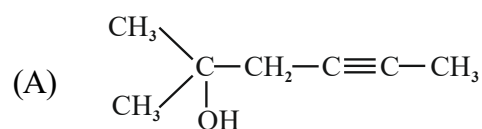
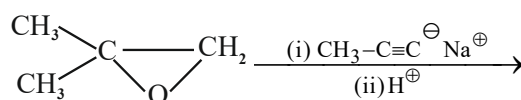
92. In the given reaction the product is :



(C) Both (A) and (B)

(D) None of these

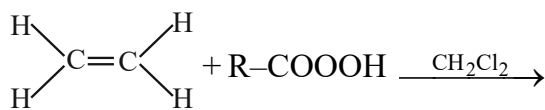
92. दी गयी अभिक्रिया में उत्पाद है :



(C) दोनों (A) और (B)

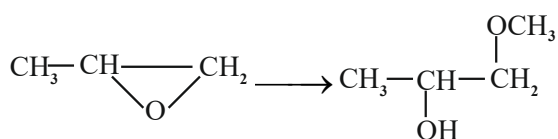
(D) इनमें से कोई नहीं

93. In the given reaction the product is :



- (A) $\begin{array}{c} \text{OH} \\ | \\ \text{H}-\text{C}-\text{H} \\ | \\ \text{H}-\text{C}-\text{H} \\ | \\ \text{OH} \end{array}$
- (B) $\begin{array}{c} \text{H} & & \text{H} \\ & \diagdown & / \\ & \text{C} & \text{C} \\ & / & \diagdown \\ \text{H} & & \text{H} \end{array}$
- (C) $\begin{array}{c} \text{H} \\ | \\ \text{H}-\text{C}-\text{OH} \\ | \\ \text{HO}-\text{C}-\text{H} \\ | \\ \text{H} \end{array}$
- (D) Both (A) and (C)

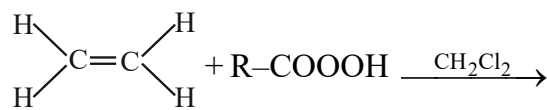
94. In the given reaction used reagent is :



- (A) (i) $\text{CH}_3\text{O}^\ominus$ / (ii) CH_3OH
(iii) $\text{H}^\oplus$
- (B) $\text{CH}_3\text{COOH} / \text{H}_3\text{O}^\oplus$
- (C) Both (A) and (B)
- (D) None of these
95. Identify the Grignard reagent :

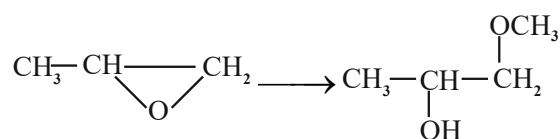
- (A) CH_3MgX
- (B) CH_3CuLi
- (C) RLi
- (D) SeO_2

93. दी गयी अभिक्रिया में उत्पाद है :



- (A) $\begin{array}{c} \text{OH} \\ | \\ \text{H}-\text{C}-\text{H} \\ | \\ \text{H}-\text{C}-\text{H} \\ | \\ \text{OH} \end{array}$
- (B) $\begin{array}{c} \text{H} & & \text{H} \\ & \diagdown & / \\ & \text{C} & \text{C} \\ & / & \diagdown \\ \text{H} & & \text{H} \end{array}$
- (C) $\begin{array}{c} \text{H} \\ | \\ \text{H}-\text{C}-\text{OH} \\ | \\ \text{HO}-\text{C}-\text{H} \\ | \\ \text{H} \end{array}$
- (D) दोनों (A) और (C)

94. दी गयी अभिक्रिया में उपयोगी अभिकर्मक है :



- (A) (i) $\text{CH}_3\text{O}^\ominus$ / (ii) CH_3OH
(iii) $\text{H}^\oplus$
- (B) $\text{CH}_3\text{COOH} / \text{H}_3\text{O}^\oplus$
- (C) दोनों (A) और (B)
- (D) इनमें से कोई नहीं
95. ग्रिगार्ड अभिकर्मक की पहचान कीजिए :

- (A) CH_3MgX
- (B) CH_3CuLi
- (C) RLi
- (D) SeO_2

96. The correct order of reactivity of an alkyl halide is :

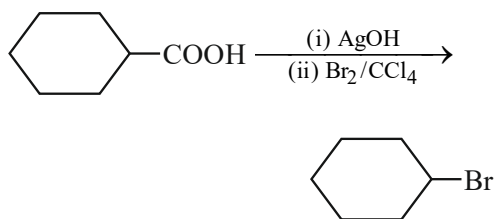
- (A) t-alkyl halide > S-alkyl halide > P-alkyl halide
 (B) P-alkyl halide > S-alkyl halide > t-alkyl halide
 (C) S-alkyl halide > P-alkyl halide > t-alkyl halide
 (D) None of these

97. In the given reaction product is :



- (A) $\text{C}_6\text{H}_5 - \text{CH}_2 - \text{Cl}$
 (B) $\text{C}_6\text{H}_5 - \underset{\text{Cl}}{\text{CH}} - \text{OH}$
 (C) $\text{C}_6\text{H}_5 - \text{CH}_3$
 (D) All of the above

98. Name of the given reaction is :



- (A) Hunsdiecker reaction
 (B) Borodine-Hunsdiecker reaction
 (C) Both (A) and (B)
 (D) None of these

96. एल्किल हैलाइड की क्रियाशीलता का सही क्रम है :

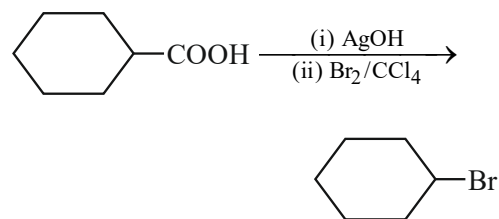
- (A) t-एल्किल हैलाइड > S-एल्किल हैलाइड > P-एल्किल हैलाइड
 (B) P-एल्किल हैलाइड > S-एल्किल हैलाइड > t-एल्किल हैलाइड
 (C) S-एल्किल हैलाइड > P-एल्किल हैलाइड > t-एल्किल हैलाइड
 (D) इनमें से कोई नहीं

97. दी गयी अभिक्रिया का उत्पाद है :



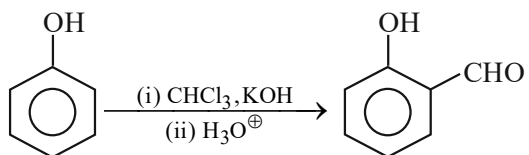
- (A) $\text{C}_6\text{H}_5 - \text{CH}_2 - \text{Cl}$
 (B) $\text{C}_6\text{H}_5 - \underset{\text{Cl}}{\text{CH}} - \text{OH}$
 (C) $\text{C}_6\text{H}_5 - \text{CH}_3$
 (D) उपरोक्त सभी

98. दी गयी अभिक्रिया का नाम है :



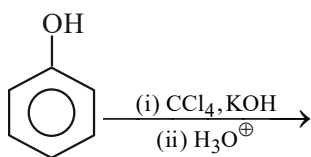
- (A) हुंसडिकर अभिक्रिया
 (B) बोरोडीन-हुंसडिकर अभिक्रिया
 (C) दोनों (A) और (B)
 (D) इनमें से कोई नहीं

99. Identify the intermediate of given reaction :



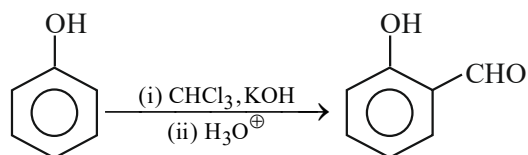
- (A) : CCl_2
 (B) CCl_4
 (C) Both (A) and (B)
 (D) None of these

100. In the given reaction the product is :



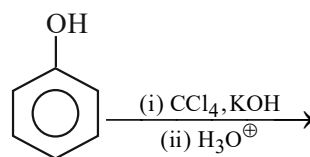
- (A)
- (B)
- (C)
- (D)

99. दी गयी अभिक्रिया के मध्यवर्ती की पहचान कीजिए :



- (A) : CCl_2
 (B) CCl_4
 (C) दोनों (A) और (B)
 (D) इनमें से कोई नहीं

100. दी गयी अभिक्रिया का उत्पाद है :



- (A)
- (B)
- (C)
- (D)

Rough Work / रफ कार्य

Example :

Question :

Q.1 (A) ● (C) (D)

Q.2 (A) (B) ● (D)

Q.3 (A) ● (C) (D)

5. Each question carries equal marks. Marks will be awarded according to the number of correct answers you have.
6. All answers are to be given on OMR Answer Sheet only. Answers given anywhere other than the place specified in the answer sheet will not be considered valid.
7. Before writing anything on the OMR Answer Sheet, all the instructions given in it should be read carefully.
8. After the completion of the examination, candidates should leave the examination hall only after providing their OMR Answer Sheet to the invigilator. Candidate can carry their Question Booklet.
9. There will be no negative marking.
10. Rough work, if any, should be done on the blank pages provided for the purpose in the booklet.
11. To bring and use of log-book, calculator, pager & cellular phone in examination hall is prohibited.
12. In case of any difference found in English and Hindi version of the question, the English version of the question will be held authentic.

Impt. On opening the question booklet, first check that all the pages of the question booklet are printed properly. If there is any discrepancy in the question Booklet, then after showing it to the invigilator, get another question Booklet of the same series.

उदाहरण :

प्रश्न :

प्रश्न 1 (A) ● (C) (D)

प्रश्न 2 (A) (B) ● (D)

प्रश्न 3 (A) ● (C) (D)

5. प्रत्येक प्रश्न के अंक समान हैं। आपके जितने उत्तर सही होंगे, उन्हीं के अनुसार अंक प्रदान किये जायेंगे।
6. सभी उत्तर केवल ओ०एम०आर० उत्तर-पत्रक (OMR Answer Sheet) पर ही दिये जाने हैं। उत्तर-पत्रक में निर्धारित स्थान के अलावा अन्यत्र कहीं पर दिया गया उत्तर मान्य नहीं होगा।
7. ओ०एम०आर० उत्तर-पत्रक (OMR Answer Sheet) पर कुछ भी लिखने से पूर्व उसमें दिये गये सभी अनुदेशों को सावधानीपूर्वक पढ़ लिया जाये।
8. परीक्षा समाप्ति के उपरान्त परीक्षार्थी कक्ष निरीक्षक को अपनी OMR Answer Sheet उपलब्ध कराने के बाद ही परीक्षा कक्ष से प्रस्थान करें। परीक्षार्थी अपने साथ प्रश्न-पुस्तिका ले जा सकते हैं।
9. निगेटिव मार्किंग नहीं है।
10. कोई भी रफ कार्य, प्रश्न-पुस्तिका में, रफ-कार्य के लिए दिए खाली पेज पर ही किया जाना चाहिए।
11. परीक्षा-कक्ष में लॉग-बुक, कैल्कुलेटर, पेजर तथा सेल्युलर फोन ले जाना तथा उसका उपयोग करना वर्जित है।
12. प्रश्न के हिन्दी एवं अंग्रेजी रूपान्तरण में भिन्नता होने की दशा में प्रश्न का अंग्रेजी रूपान्तरण ही मान्य होगा।

महत्वपूर्ण: प्रश्नपुस्तिका खोलने पर प्रथमतः जाँच कर देख लें कि प्रश्नपुस्तिका के सभी पृष्ठ भलीभाँति छपे हुए हैं। यदि प्रश्नपुस्तिका में कोई कमी हो, तो कक्षनिरीक्षक को दिखाकर उसी सिरिज की दूसरी प्रश्नपुस्तिका प्राप्त कर लें।