



CHEMISTRY

BOOKS - UNITED BOOK HOUSE

HIGHER SECONDARY EXAMINATION 2019

Exercise

1. Select the correct answer out of the option given against each question and write in the box provided on right hand side bottom: Which of the following is antihistamin drug?

A. Brompheniramine

B. Omiprazole

C. Chloramphenicol

D. Norethydrine

Answer:



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2. Which of the following bases is not present in RNA?

A. Adenine

B. Guanine

C. Thymine

D. Uracil

Answer:



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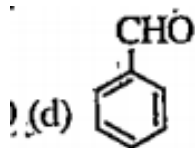
3. Which of the following compound does not respond to aldol con-densation reaction?

A. CH_3CHO

B. CH_3COCH_3



D.

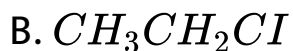


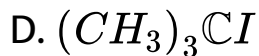
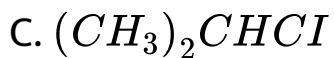
Answer:



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4. Which of the following is most reactive in S_N2 reaction?





Answer:



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5. Which of the following transition elements shows +7 oxidation state?

A. Cr

B. Mn

C. Fe

D. Ni

Answer:



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6. Which of the following is lyophilic colloid?

A. Milk

B. Blood

C. Gold sol

D. Gum

Answer:



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7. Which of the following is strongly attracted by magnetic field?

- A. Paramagnetic
- B. Diamagnetic
- C. Ferromagnetic
- D. Antiferromagnetic

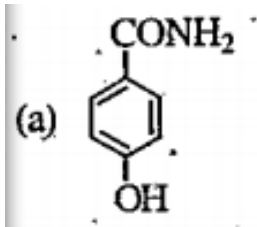
Answer:



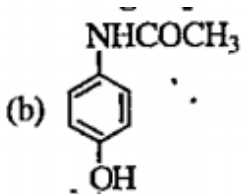
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8. Which of the following is paracetamol?

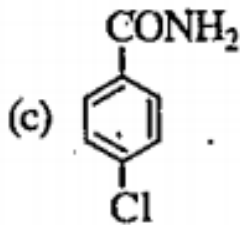
A.



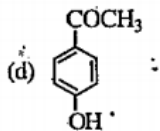
B.



C.



D.



Answer:

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9. Which of the following is not condensation polymer?

A. Nylon

B. Melamine-formaldehyde

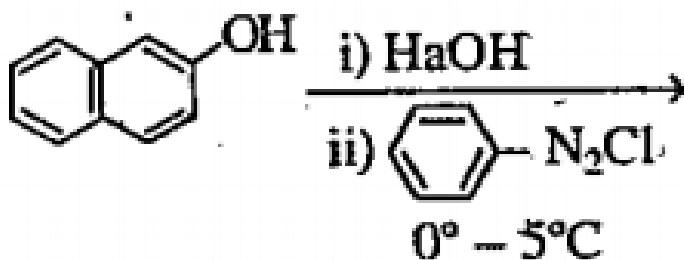
C. Teflon

D.

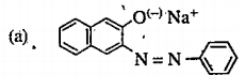
Answer:

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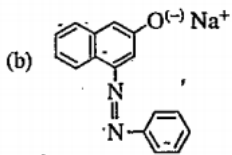
10. In the following reaction the compound 'A' is-



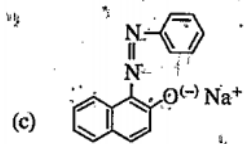
A.



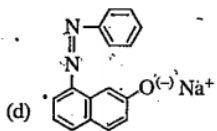
B.



C.



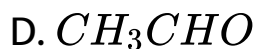
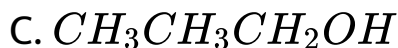
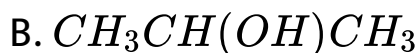
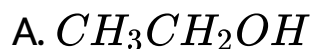
D.



Answer:

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11. Which of the following cannot be identified by iodoform test?



Answer:

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12. Which of the following is strongest base?



Answer:



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13. Charge carried by 1 mole PO_4^{3-} ions is.

A. 96500

B. 32167C

C. 289500C

D. 193000C

Answer:



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14. Answer the following questions (Alternatives are to be noted): Why is BHA added in butter?



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15. Why is magnetic moment of ferric compound more than ferrous compounds?

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16. Write general electronic configuration of actinoids.

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17. How can a colloidal solution and true solution of the same colour be distinguished from each other?

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18. Arrange Li^+ , Na^+ and Rb^+ ions in the ascending order of their molar ionic conductance (α°)



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19. What is the unit of electro-chemical equivalent?



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20. Answer the following questions (Alternatives are to be noted): KBr undergoes 80% dissociation in its

0.5 (m) aqueous solution. Calculate osmotic pressure of the solution at $27^{\circ}C$ temperature.



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21. What is azeotropic mixture? Can it be considered as ideal solution?



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22. Write two differences between physisorption and chemisorption.



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23. What is peptisation? Give one example.

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24. Mention two differences between bleaching action of SO_2 and Cl_2 .

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25. Which of the halogen hydracids forms bi-salts ?

Write reasons.

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26. Which type of isomerism is shown by the two complexes: $[Co(NH_3)_5SO_4]$ Br and $[Co(NH_3)_5Br]SO_4$? How would you distinguish between two complexes?



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27. Write the name of monomer units of Dacron and mention one use of it.



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28. Which type of stoichiometric defects is shown by Ag Br crystal?



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29. Chromium (atomic-mass=52) metal has body-centred cubic structure. The radius of chromium atom is 124.3 pm. Calculate the density of chromium metal.



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30. What do you mean by packing fraction of cubic unit cell?



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31. Calculate packing fraction of face-centred cubic unit cell.



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32. What is the vapour pressure of pure water at $100^{\circ}C$ temperature?



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33. 12 g of a solid solute is dissolved in 90 gm pure water. Vapour pressure of the resulting solution is 750 mm Hg at 100°C temperature. Calculate molecular mass of the solute [Solute does not undergo any dissociation or association in its aqueous solution]



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34. Write cell reaction and calculate electrical work obtained from the following galvanic cell at standard condition:

$$\text{Mg} | \text{Mg}^{2+}(\text{aq}) || \text{Ag}^{+}(\text{aq}) | \text{Ag}$$

Given: $E^{\circ}_{\text{Mg}^{2+}/\text{Mg}} = -2.36\text{V}$ & $E^{\circ}_{\text{Ag}^{+}/\text{Ag}} = 0.80\text{V}$



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35. Write composition of copper matte.



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36. Write balanced equations for the reactions involved in the extraction of copper from copper matte.



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37. Which type of ores is concentrated by froth floatation process?

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38. What is thermit mixture? Mention one use of it.

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39. Which of the following are coloured in aqueous solution? Give reasons: V^{3+} , Cu^{2+} , Sc^{3+} , Fe^{3+}

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40. Which of the following oxides are amphoteric?

Mn_2O_7 , CrO_3 , $CrO - 3$, V_2O_5



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41. Explain why most of the Cu (1) compounds are unstable in aqueous solution.



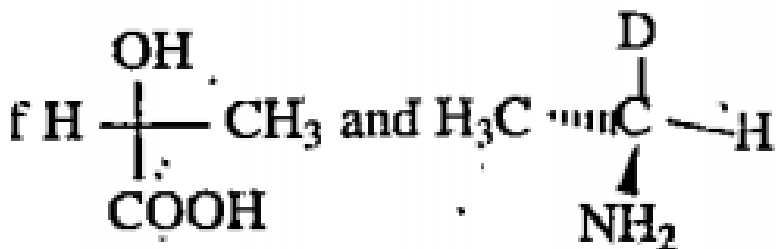
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42. What happens when MnO_4^{2-} ion is kept in acid medium? Write balanced equation.



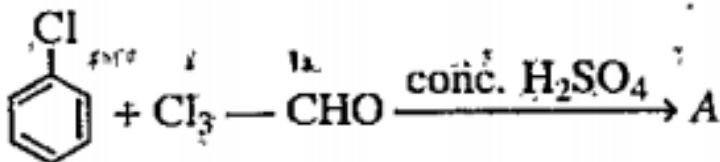
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43. Write R/S configuration of



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44. Write structural formula of *A* for the following reaction:

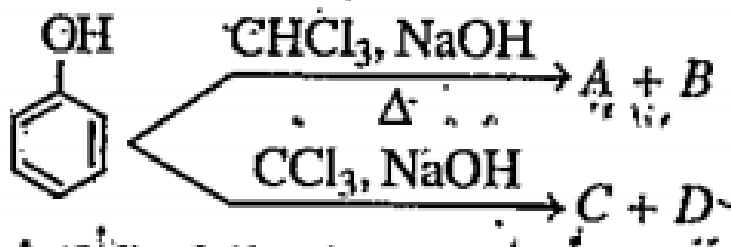


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45. Distinguish between propanone and pentan-3-one by a suitable chemical test.

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46. Write the structural formula of A, B, C, D in the following reactions:



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47. Write equation of the following conversion .

Salicylic and aspirin.



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48. Mention one use of Lucas reagent.



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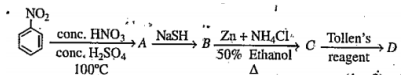
49. Convert aniline to fluorobenzene.



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50. Write structural formula of the compounds A to

D.



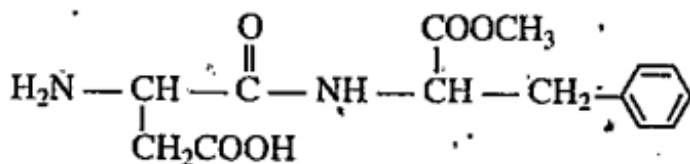
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51. An organic compound A (C_3H_8O) on treatment with Cu dust at 573 K gives B. B does not reduce Fehling's solution but gives a yellow precipitate of compound C with I_2NaOH . Deduce the structures of A, B and C and their IUPAC names.



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52. The following compound is an example of peptide



Write.

Zwitterion structure of the compound. How many amino acids will be obtained on hydrolysis of the compound?

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53. Write equation for the reaction of glucose with periodic acid.

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54. Draw the graph of half-life period $\left(t_{\frac{1}{2}}\right)$ versus initial concentration of reactant $([A]_0)$ for a zero order reaction. Give reasons in favour of your answer.



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55. The rate of a reaction at 200 K is 10 times less than the rate of the reaction at 400 K. Calculate activation energy of the reaction.



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56. The unit of rate constant of a chemical reaction is $L^2 mol^{-2} s^{-1}$. Calculate order of the reaction.

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57. The rates of a first order reaction after 10 mins and 20 mins from the commencement of the reaction are $0.04 \text{ mol } L^{-1} s^{-1}$ and $0.03 \text{ mol } L^{-1} s^{-1}$ respectively. Calculate half-life period of the reaction.

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58. What is the shape of XeF_4 molecules? Write the chemical equation of the reaction of XeF_4 and KI?

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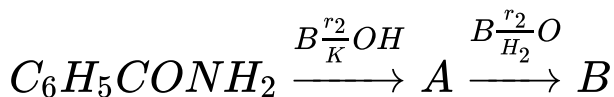
59. What is Nessler's reagent ? Where is it used ?

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60. How can borax be prepared from colemanite ?

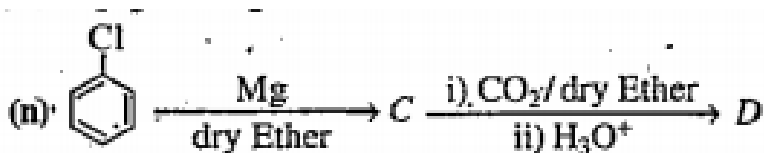
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61. Write structural formula of the compounds A to F.



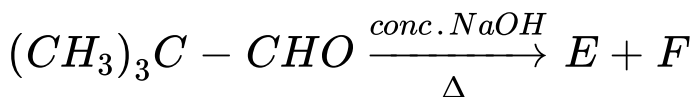
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62. Write structural formula of the compounds A to F.



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63. Write structural formula of the compounds A to F.



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64. Convert the Benzaldehyde to cinnamic acid.

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65. Convert the Acetic acid to Acetaldehyde.

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66. What is the reason for the reducing property of formic acid ? Give example of its reducing property.

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67. Mention the reagents used for the following conversions.



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68. Mention the reagents used for the following conversions. $CH_3CHO \xrightarrow{A} CH_3COOC_2H_5$

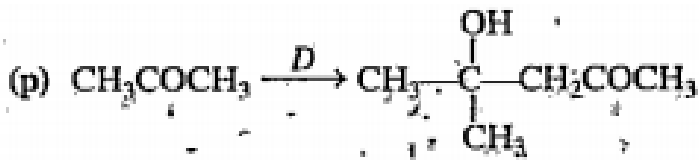
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69. Mention the reagents used for the following conversions.



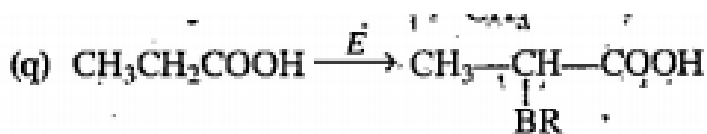
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70. Mention the reagents used for the following conversions.



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71. Mention the reagents used for the following conversions.



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72. Mention the reagents used for the following conversions. $\text{CH}_3\text{CHO} \xrightarrow{F} \text{CH}_3\text{COCH}_2\text{Br}$

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