CHEMISTRY

BOOKS - PATHFINDER CHEMISTRY (BENGALI ENGLISH)

ORGANIC CHEMISTRY: SOME BASIC PRINCIPLES AND TECHNIQUES

Question Bank

1. Name the class of compounds to which each of the following belongs :

$CH_3CH_2OCH_3$

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2. Name the class of compounds to which each of the following belongs :

HCOOH

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3. Name the class of compounds to which each of the following belongs :

$CH_3C \equiv CH$

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4. Name the class of compounds to which each of the following belongs :

$CH_3CH_2CH_3$

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5. Name the class of compounds to which each of the following belongs :

$CH_3CH_2NH_2$

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6. Name the class of compounds to which each of the following belongs :

CH_3COOCH_3

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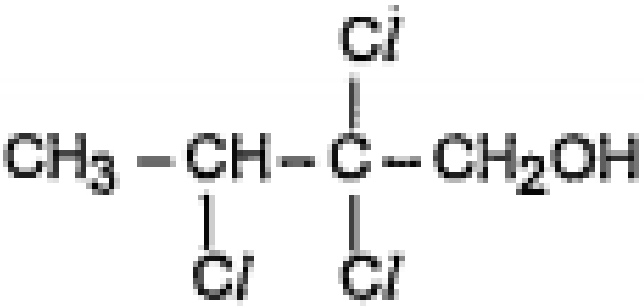
7. Write the IUPAC names of the following compounds :



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8. Write the IUPAC names of the following compounds :

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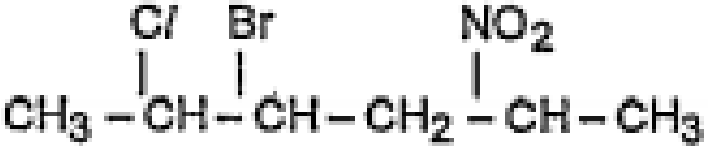
9. Write the IUPAC names of the following compounds :



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10. Write the IUPAC names of the following compounds :

$CH_3 - C \equiv C - CH_2 - CHO$

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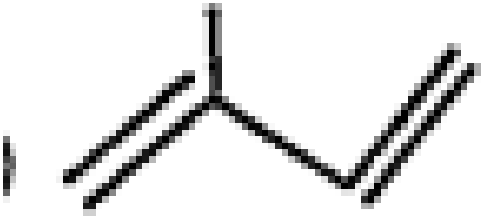
11. Write the IUPAC names of the following compounds :



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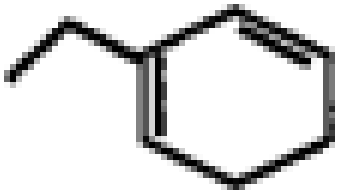
12. Write the IUPAC names of the following compounds :



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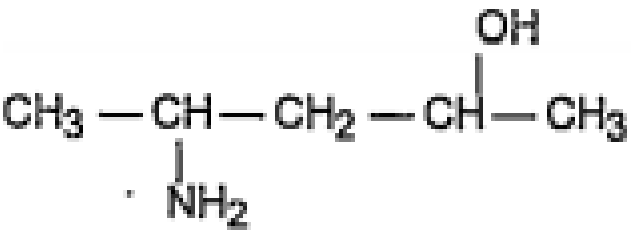
13. Write the IUPAC names of the following compounds :



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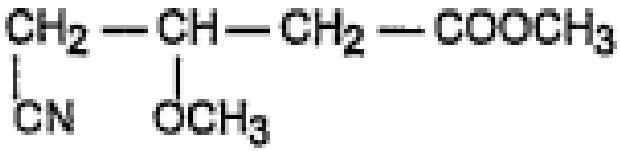
14. Write the IUPAC names of the following compounds :



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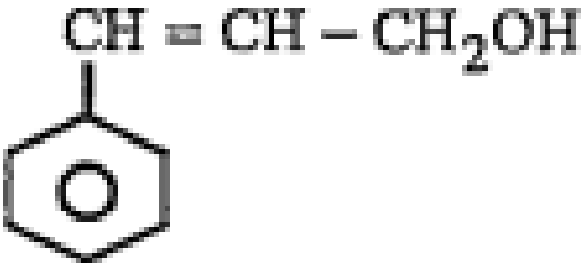
15. Write the IUPAC names of the following compounds :



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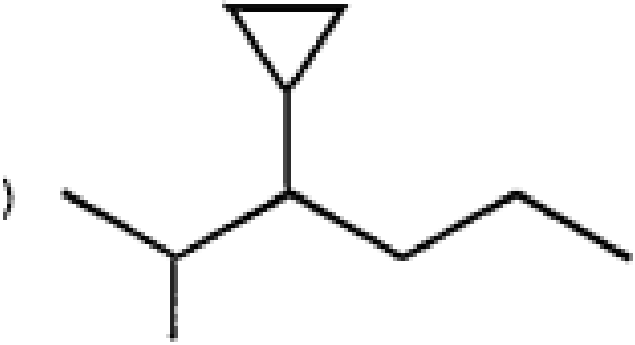
16. Write the IUPAC names of the following compounds :



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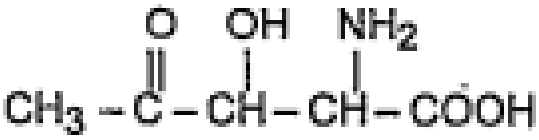
17. Write the IUPAC names of the following compounds :



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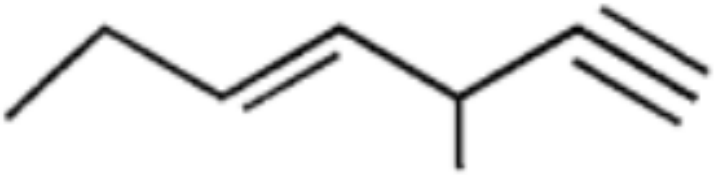
18. Write the IUPAC names of the following compounds :



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19. Write the IUPAC names of the following compounds :

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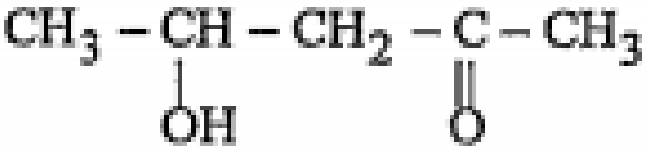
20. Write the IUPAC names of the following compounds :



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21. Draw the structure of Borax.

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22. Choose the correct answer:

The hybridisation of the carbon atom (underlined) present in

`(PAT_CHE_0XI_B02_C03_E01_022_Q01.png"

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is

A. sp^3

B. sp^2

C. sp

D. sp^3d^2

Answer: A

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23. Fill in the blanks :

Propanone and propanal are____isomers.

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24. Fill in the blanks :

The metamers of $C_4H_{10}O$ are_____ + _____

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25. Fill in the blanks :

Propan-1-ol and propan-2-ol are _____ isomers.

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26. Fill in the blanks :

The prussian blue colour seen in the lassaigne's test for nitrogen detection is due to the formation of _____

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27. Define the term resonance and explain the extra stability of Benzene than its open analog (Hexa-1,3,5-tri-ene).

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28. Explain the term inductive effect ? Give two examples for the following Groups having + I effect.

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29. Explain the term inductive effect ? Give two examples for the following Groups having - I effect.

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30. Identify the radicals formed.

What types of bond cleavage takes place in ?

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31. Identify the radicals formed.

What types of bond cleavage takes place in ?

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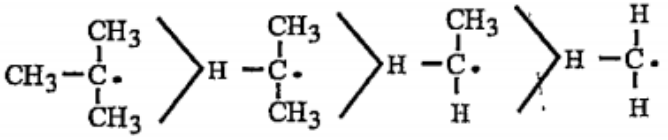
32. Explain with mechanism, for the following trends of the stability of the free radicals



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33. What are electrophiles and nucleophiles ? Give an example of neutral electrophile and nucleophile.

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34. What type of reaction intermediate are obtained when a covalent bond undergoes homolytic fission ?

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35. What is the state of hybridisation for central carbon atom in carbocation and carbanion ?

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36. What type of structure is pomened by a triplet carbon ?

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37. Why 1° carbocation more stable than a 2° carbanion ?

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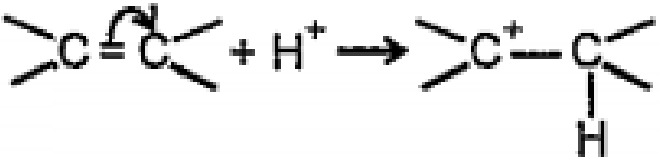
38. What type of effect is involved in the following reactions ?



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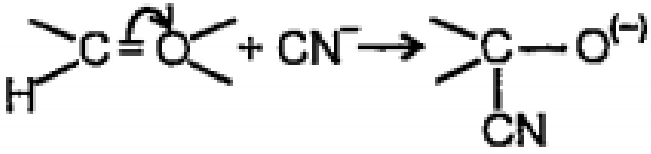
39. What type of effect is involved in the following reactions ?



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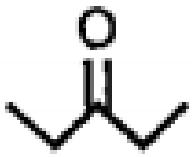
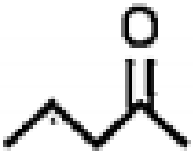
40. What is the relationship between the members of following pairs of structure ? Are they colentical, structural or geometrical isomers or resonance contributors ?

)  and 

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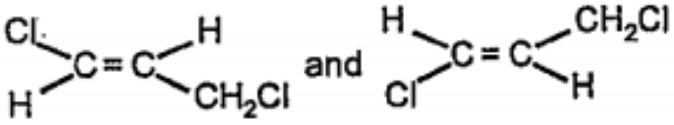
41. What is the relationship between the members of following pairs of structure ? Are

they colentical, structural or geometrical isomers or resonance contributors ?



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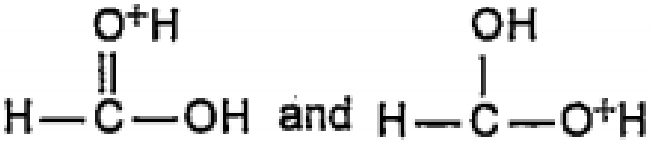
42. What is the relationship between the members of following pairs of structure ? Are they colentical, structural or geometrical

isomers or resonance contributors ?



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43. What is the relationship between the members of following pairs of structure ? Are they colentical, structural or geometrical isomers or resonance contributors ?

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44. Why do free radical and carbene act as electrophiles ?

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45. Discuss the orbital structure and cause of reactivity of carbanions ? Why is ethyl carbanion more reactive than methyl carbanion

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46. What are addition reactions ? What is unsaturated hydrocarbons ? Why is ethyl carbanion more reactive than methyl carbanion ?

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47. What is substitution reaction? What type of substitution reactions are there?

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48. Write the structural formula of the following compounds:

3-oxopentanal.

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49. Write the structural formula of the following compounds:

hex - 4 - ene - 3 one.

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50. Write the structural formula of the following compounds:

2-methoxylbutan - 1 - ol.

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51. Write the structural formula of the following compounds:

ethyl - 3 - hydroxybutanoate.

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52. Write the structural formula of the following compounds:

3 - methoxypentanoyl chloride.

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53. Write the structural formula of the following compounds:

6 - cyano - 3 - oxohept - 4 - enal.

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54. Write the structural formula of the following compounds:

3 - ethylcyclohexanol.

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55. Write the structural formula of the following compounds:

4 - cyclopentyl but - 3 - en - 2 - one .

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56. Write the structural formula of the following compounds:

3, 5 - octadiene.

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57. Give the IUPAC names and structure of the following compounds :

m-dinitrobenzene

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58. Give the IUPAC names and structure of the following compounds :

p-cresol

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59. Give the IUPAC names and structure of the following compounds :

p-xylene

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60. Give the IUPAC names and structure of the following compounds :

resorcinol

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61. Give the IUPAC names and structure of the following compounds :

m-toluidine

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62. Give the IUPAC names and structure of the following compounds :

pyrogallol

Watch Video Solution

63. Give the IUPAC names and structure of the following compounds :

catechol

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64. Give the IUPAC names and structure of the following compounds :

quinol

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65. Give the IUPAC names and structure of the following compounds :

salicylic acid

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66. What do you understand by homologous series ?

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67. What is catenation ?

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68. Write an alkane and alkene with general formula C_4H_8 ?

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69. Write the structures of higher homologues of HCHO and CH_3COCH_3

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70. An organic compound has the molecular formula $C_2H_4O_2$. Write the structures and names of two compounds with this formula.

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71. What do you mean by the term tautomerism ? Explain keto-enol tautomerism.

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72. What do you mean by the term metamerism ? Explain with proper example.

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73. Draw the structure of all the isomeric ethers having molecular formula $C_5H_{12}O$

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74. What is substitution reaction? What type of substitution reactions are there?

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75. Give four differences between inductive effect and mesomeric effect.

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76. Explain differences extraction.

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77. Give two differences between inductive effect and electromeric effect.

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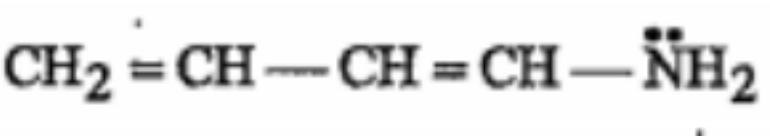
78. Give the resonance structures of the following species



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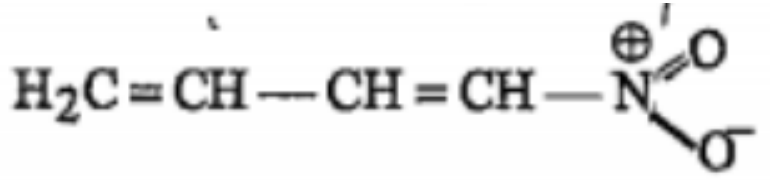
79. Give the resonance structures of the following species



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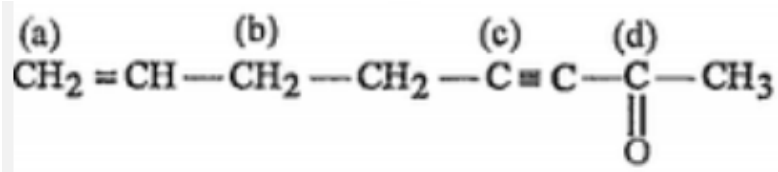
80. In the organic compound



what are the hybridisation of Carbon (a), carbon (b), carbon (c),and carbon (d)

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81. What do you mean by term chromatography?

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82. What is retardation factor?

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83. What are the main two types of chromatography techniques based on differential adsorption ? Write a detail discussion.

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84. 0.45 g of an organic compound when analysed by combustion gave 1.10 g carbon dioxide and 0.3 g water . Calculate the percentage of carbon and hydrogen in it .

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85. In Duma's method 0.206 g of an organic compound gave $18.8cm^3$ moist $N_2at17\hat{}@$ C and $760mmHgpressure. Ifaqueoustensionat$ 17^@`C is 14.5 mm Hg, calculate the percentage of nitrogen in the given organic compound.

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