

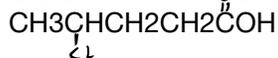
Organic past papers (رَوَح)

Dr. Alashram exam

Done by :



1- What is the name for the following:

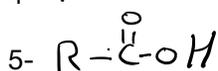
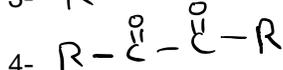
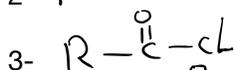
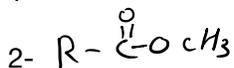
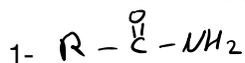


- 1-chloropentanoic acid - 4-chloropentanoic acid - 3-chloropentanoic acid - 2-chloropentanoic acid

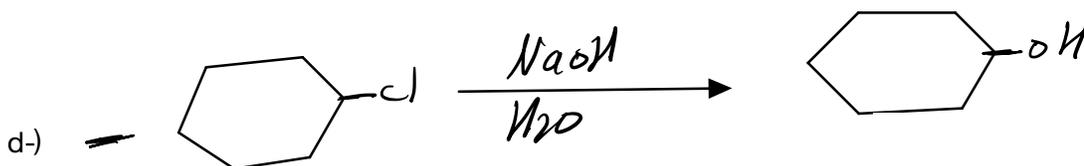
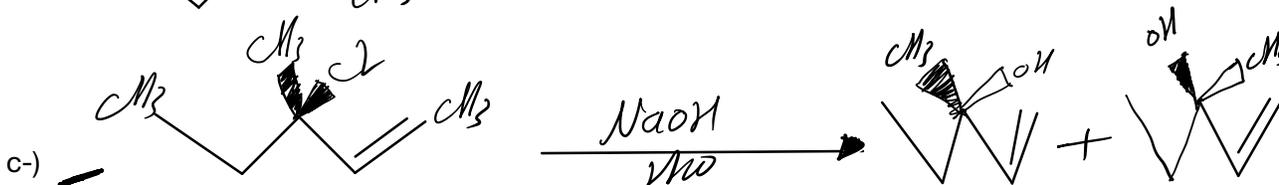
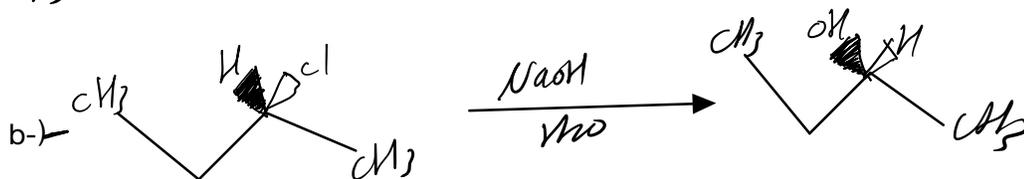
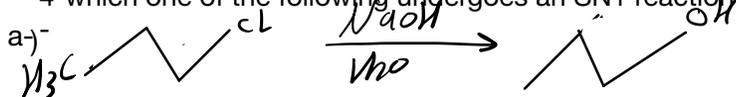
2-the following reagent ($\text{CH}_3\text{CH}_2\text{CH}_2\text{MgBr}$) can be prepared from

- a)• reaction $\text{CH}_3\text{CH}_2\text{CH}_2\text{Mg}$ with Br_2
- b)• reaction $\text{CH}_3\text{CH}_2\text{CH}_2\text{Br}$ with Mg
- c)• reaction of $\text{CH}_3\text{CH}_2\text{CH}_3$ with MgBr
- d)• reaction of $\text{CH}_3\text{CH}_2\text{CH}_3$ with $\text{Mg} + \text{Br}$

3- which one of the following carboxylic acid derivative is the most reactive



4-which one of the following undergoes an $\text{S}_{\text{N}}1$ reaction

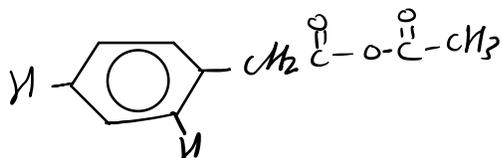


Answer: B

5- what the major organic product of the reaction of acetaldehyde (CH₃CHO) with hydroxylamine NH₂OH



6- the following compound can be considered as

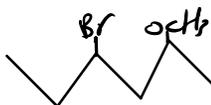


- a) ether
- b) aldehyde
- c) anhydride
- d) ester

7- dehydration of 1,2-dimethyl-1-cyclohexanol

- a) one alkene
- b) two alkene
- c) three alkene
- d) four alkene

Answer: C

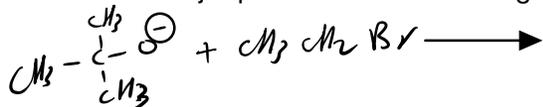


8- the name of the following compound is

- a) 3-bromo-5-methoxyhexane
- b) 2-methoxy-4-bromohexane
- c) 4-bromo-2-methoxyhexane
- d) 3-bromo-2-methoxy-2-methylpentane

Answer: C

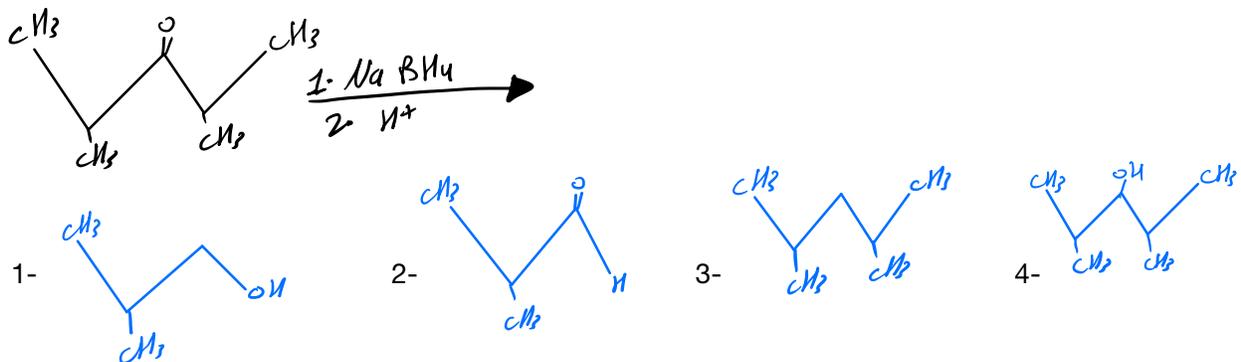
9- what is the major product of the following reaction



- a) alcohol
- b) ether
- c) ketone
- d) anhydride
- e) alkene

Answer: B

10- what is the major product



11- which one of the following reagent would be best for oxidizing 1°-alcohol to an aldehyde

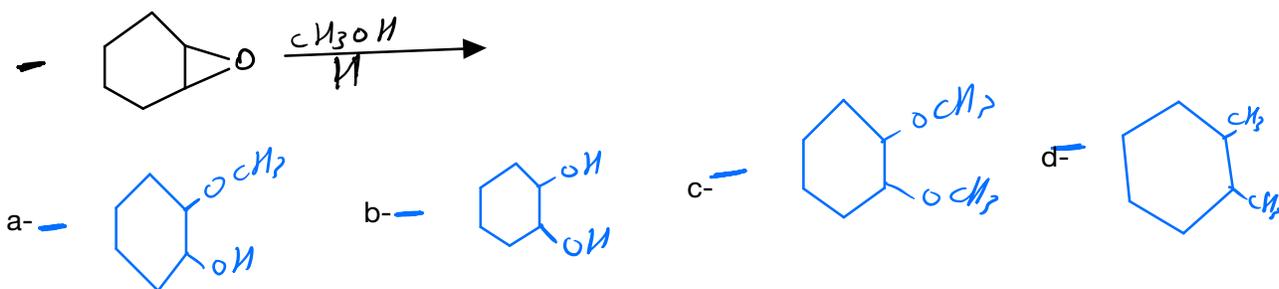
- a- H₃PO₄
- b- pcc
- c- CrO₃
- d- H₂SO₄
- e- OsO₄

12- the strongest acidic compound of the following

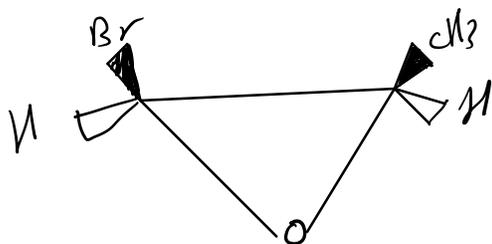
- a)-p-methylphenol
- b)-p-nitrophenol
- c)-phenol
- d)-p-bromophenol

Answer: B

13- which one is the main product of acid-catalysed reaction of epoxide in methanol



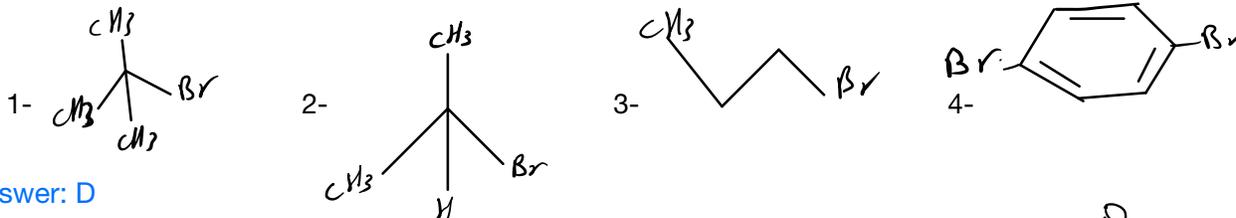
14- the correct name of the following



- a) cis-2-bromo-3-methyloxirane
- b) cis-3-bromo-2-methyloxirane
- c) cis-1-bromo-2-methyloxirane
- d) cis-2-bromo-1-methyloxirane

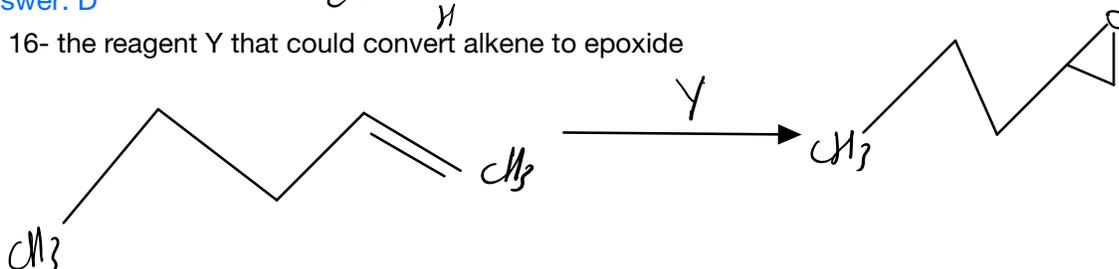
Answer: A

15- which of the following will react most rapidly in SN1 mechanism



Answer: D

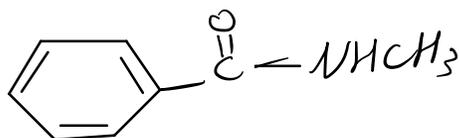
16- the reagent Y that could convert alkene to epoxide



- a) • m-CPBA
- b) • O₂
- c) • AgNO₃
- d) • KMnO₄

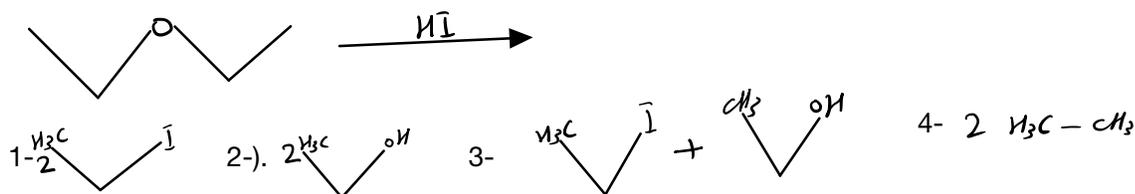
Answer: A

17-the following compound can be considered as



- a) -primary amine
- b) -secondary amine
- c) -primary amide
- d) -secondary amide

18-what is the major product of the following reaction

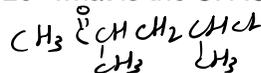


Answer: A

19- lactones are common names for

- a) -ester
- b) -cyclic ester
- c) -cyclic amides
- d) -cyclic anhydride

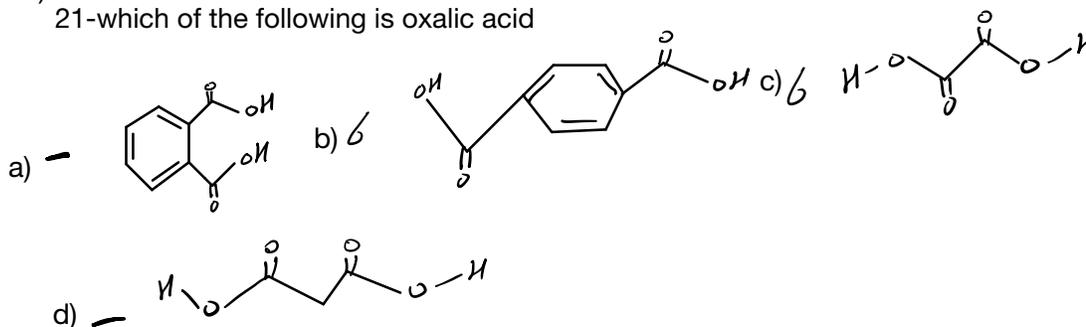
20- what is the UPAC name for



- a) -5-chloro-3-methylhexanone
- b) -1-chloro-1,3-dimethyl-4-pentanone
- c) -5-chloro-3-methyl-2-hexanone
- d) -5-chloro-3,5-dimethyl-2-pentanone

Answer: C

21- which of the following is oxalic acid



22- calculate the % carbon by mass in glucose C₆H₁₂O₆

- a) -53.3%
- b) -3.33%
- c) -40%
- d) -6.7%

23- Iron(II) chloride has the formula

- a) • FeCL3
- b) • FeCL2
- c) • Fe2Cl3
- d) • FeCL

24- A 90 g of glucose is dissolved in enough water to make 500 ml of solution, what the molarity

MM=180

- a) • 1.0 M
- b) • 0.50 M
- c) • 1.5 M
- d) • 0.25 M

25- A bound that is formed between opposite charged ions is called bound

- a) • polar covalent
- b) • Coordinate covalent
- c) • Non- polar covalent
- d) • Ionic

26- consider the following general equilibrium reaction represented by the equation $2A_{(aq)} + 3B_{(aq)} \rightleftharpoons C_{(aq)}$

12M of compound (A) and 61M of compound (B) are mixed at a certain temperature and at equilibrium, the concentration of compound (C) is 4M , calculate the value for the equilibrium constant k for this reaction



- a) • $3.91 \cdot 10^{-3}$
- b) • 0.0208
- c) • 0.25
- d) • 256

27- which solution below has the highest concentration of H⁺

- a) • PH = 3.21
- b) • PH = 9.82
- c) • PH = 7.93
- d) • PH = 12.59

28- How many moles and how many atoms of zinc are in a sample weighing 34.9 g (atomic mass for Zn= 65.38 g/ mole

- a) • 0.533 mole and $8.85 \cdot 10^{-5}$ atoms
- b) • 0.533 mole and $3.21 \cdot 10^{33}$ atoms
- c) • 1.87 mole and $3.10 \cdot 10^{-24}$ atoms
- d) • 1.87 mole and $1.13 \cdot 10^{24}$ atoms

29- which group contains only elements which normally exist as monoatomic amino

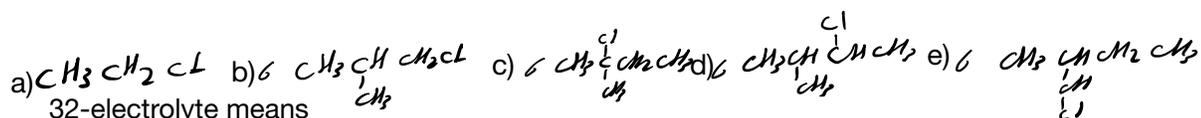
- a) • nitrogen, sulfur, bromine
- b) • helium, neon, argon
- c) • nitrogen, oxygen, fluorine
- d) • hydrogen, lithium, sodium

30- in the periodic table notation below, what information does the number 40.08 tell you

| |
|-------|
| 20 |
| Ca |
| 40.08 |

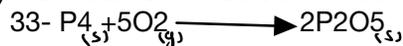
- a) • it is the number of protons
- b) • it is the number of neutrons
- c) • it is the mass number
- d) • it is the atomic mass
- e) • it is the average atomic mass

31- which of the following is a secondary alkyl halide



32-electrolyte means

- a) • the substance that when dissolved in water produced a solution that conduct electricity
- b) • the substance that when put in water produce a solid
- c) • the substance that when dissolved in water change its color
- d) • the substance that when dissolved in water produce a gas



If 6.25 g P₄ react with O₂ , what moles and mass of P₂O₅ (MM ~ P₄= 123.9 , O₂= 32, P₂O₄= 141.94)

- a) • 0.1008 mole , 14.31 g
- b) • 0.0504 mole , 7.15 g
- c) • 0.1008 mole , 7.15 g
- d) • 0.0504 mole , 14.31 g



34-Which of the following salts is insoluble in water

- a) • AgCl
- b) • Li₃PO₄
- c) • Na₂SO₄
- d) • Na₂CO₃

35- which of the statements is true about E1

- I) the rate limiting step of the reaction involve only alkyl halide
- II) the rate limiting step of the reaction involve the alkyl halide and base
- III) there is intermediate carbocation
- IV) the order of reactivity is $1^\circ > 2^\circ > 3^\circ$

- a) • I,III
- b) • II
- c) • I,III,IV
- d) • II,IV

Answer: A



2.5 mole of CH₄ with 31.5 g H₂O , determine the limiting reactant and the mass of CO

MM ~ CH₄= 16, H₂O= 18 , H₂=2, CO=28

- a) • limiting: CH₄ , mass= 49 g
- b) • limiting: H₂O, mass= 10.5 g
- c) • limiting: H₂O, mass= 49 g
- d) • limiting: CH₄ , mass= 10.5 g

37- sharing electron equally between two atoms will form

- a) • polar covalent
- b) • ionic bond
- c) • non-polar covalent
- d) • hydrogen bond

38- the carbocation intermediate is the inter form in both

- a) • SN₁, SN₂
- b) • SN₁, E₂
- c) • SN₂, E₂
- d) • E₁, E₂
- e) • SN₁, E₁

Answer: E

39-what is the equivalent of 339.3 K in F

- a) • 151 F
- b) • 252 F
- c) • 101.5 F
- d) • 339.3 F

40- How many significant figures in the following number 8.000*10³

- a) • 1
- b) • 2
- c) • 3
- d) • 4
- e) • 5



41- what is the pH of a buffer solution that is 0.45M HC₂H₃O₂ and 0.85M NaC₂H₃O₂, K_a= 1.8*10⁻⁵
a) • 5.02

42- a gas mixture of 15 g of each CO₂, N₂ and CO under 25° C has a volume of 10L , what is the pressure of gas mixture
a)• 3.45 atm

43-calculate the PH of a solution made by mixing 0.30 mole of HC₂H₃O₂ (k_a= 1.8*10⁽⁻⁵⁾) with 0.050 mole NaOH 1.0 L of aqueous solution
a) • 4.75
b) • 4.05
c) • 0.699
d) • 12.7

44- formula of sodium dihydrogen phosphate
a) • NaH₂PO₄

45- consider the following equilibrium reaction
$$\text{N}_2(\text{g}) + 3\text{H}_2(\text{g}) \longrightarrow 2\text{NH}_3(\text{g})$$

the equilibrium expression terms of partial pressure of gaseous constituents of the reaction, K_p equal
a)• K_p= (P(NH₃))² / (P(N₂)) (P(H₂))³
b)• K_p= (P(N₂)) (P(H₂))³ / (P (NH₃))²
c)• K_p = (P(NH₃)) / (P(N₂)) (P (NH₃))
d)• K_p = (P(N₂)) (P(H₂)) / (P (NH₃))

46- calculate the moles number of gas 23C volume 25 Land the pressure 3.18 atm
a)• 3.27 moles





الطب والجراحة
لجنة

