

CHEMISTRY

BOOKS - MHTCET PREVIOUS YEAR PAPERS AND PRACTICE PAPERS

PRACTICE SET 24

Paper 1 Physics And Chemistry

1. The reaction $A \rightarrow B$ follows first order kinetics.
The time taken for 0.8mol of A to produce 0.6mol of

B is 1hr . What is the time taken for the conversion of 9.0mol of A to Product 0.675mol of B ?

A. 0.25 h

B. 2 h

C. 1 h

D. 0.5 h

Answer: c



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2. The heat treatment that destroys harmful bacteria and also causes little nutrient damage is

- A. freeze drying
- B. pasteurisation
- C. drying
- D. None of these

Answer: b



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3. In the reaction , $2H_2O_2 \rightarrow 2H_2O + O_2$, oxygen is

- A. oxidised only
- B. reduced only

C. neither oxidised nor reduced

D. both oxidised and reduced

Answer: d



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4. General valence shell electronic configuration of f – block elements is

A. $(n - 2)f^{1-14}(n - 1)d^{0-1}ns^2$

B. $(n - 2)f^{1-14}(n - 1)d^{0-10}ns^1$

C. $(n - 2)f^{1-10}(n - 1)d^{0-1}ns^2$

$$D. (n - 2)f^{1-14}(n - 1)d^{0-1}ns^1$$

Answer: a



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5. First member of ether series on reaction with sodium and liquified ammonia gives

A. methanol + methane

B. ethane + methanol

C. ethanol

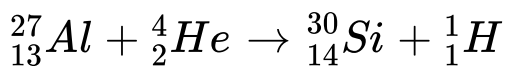
D. ethane

Answer: d



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6. The nuclear reaction given below is of type



A. fusion

B. fission

C. chemical

D. transmutation

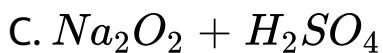
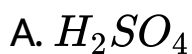
Answer: d





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7. The laboratory method for the preparation of H_2O_2 is by



D. All of these

Answer: c



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8. How many grams of $Na_2S_2O_3$ are needed to prepare five litres of an 8% solution (by mass) having density = 1.075 g / mL ?

A. 43.0 g

B. 430 g

C. 400 g

D. 40 g

Answer: b



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9. The van't Hoff factor for a dilute solution of $K_3[Fe(CN)_6]$ is likely to be

A. 10

B. 4

C. $\frac{1}{4}$

D. 5

Answer: b



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10. An aqueous solution of glucose was prepared by dissolving 18g of glucose in 90g of water. The relative lowering in vapour pressure is

A. 1.1

B. 0.0196

C. 20

D. 196

Answer: b



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11. The chief component of cement that has property of setting quickly and acquiring considerable strength within few days is

A. tricalcium silicate ($3CaO \cdot SiO_2$)

B. dicalcium silicate ($2CaO \cdot SiO_2$)

C. tricalcium aluminate ($3CaO \cdot Al_2O_3$)

D. All of these

Answer: d



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12. Hydrocyanic acid ($K_a = 4.8 \times 10^{-10}$) is dissociated to an extent of ... In 1.0 M solution . F

A. 0.0022 %

B. 0.022 %

C. 0.0048 %

D. None of these

Answer: a



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13. The concentration of acetic acid ($K_a = 1.8 \times 10^{-5}$) required to give 3.5×10^{-4} moles / litres of H_3O^+ ions is

A. 6.8 mol/L

B. $6.8 \times 10^{-3} \text{ mol / L}$

C. $1.94 \times 10^{-1} \text{ mol / L}$

D. 194 mol/L

Answer: b



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14. After losing a number of α and β - particles

${}_{92}^{238}\text{U}$ is changed to ${}_{82}^{206}\text{Pb}$. The number of protons

lost in this process is

A. 10

B. 5

C. 8

D. 32

Answer: c



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15. Which one of the following systems is an example of a closed system ?

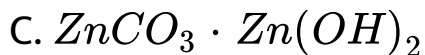
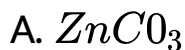
- A. some amount of water in equilibrium with its vapour in a closed and insulated vessel
- B. some amount of hot water enclosed in a closed container which is not insulated
- C. Hot water contained in an open vessel
- D. None of these

Answer: c



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16. $ZnSO_4$ on boiling with Na_2CO_3 solution produces



D. None of these

Answer: c



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17. Which one given below is a non – reducing sugar ?

A. Sucrose

B. Maltose

C. Lactose

D. All of these

Answer: a



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18. Regenerated fibres have superior physical properties because

- A. they are fresh fibres
- B. they are obtained naturally
- C. they are chemically treated fibres
- D. None of these

Answer: c



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19. At high pressure ,Langmuir adsorption isotherm takes the form :

A. $\frac{x}{m} = \frac{ap}{1 + bp}$

B. $\frac{x}{m} = \frac{a}{b}$

C. $\frac{x}{m} = ap$

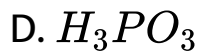
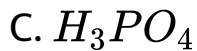
D. $\frac{m}{x} = \frac{b}{a} + \frac{1}{ap}$

Answer: b



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20. The conjugate base of HPO_4^{2-} is



Answer: a



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21. Lansorprazole is used as

A. antioxidant

B. antacid

C. antimicrobial

D. disinfectant

Answer: b



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22. Which one of the following is not a truly synthetic fibre ?

A. nylon - 6

B. Rayon

C. Nylon - 66

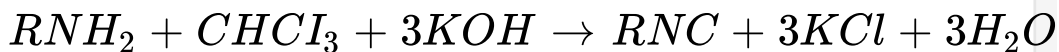
D. Terylene

Answer: b



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23. The reaction



is known as

- A. Hofmann's reaction
- B. Victor Meyer's reaction
- C. Cannizaro's reaction

D. Carbylamine reaction

Answer: d



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24. Non - formation of meniscus by Hg in presence of

O_3 is due to the formation of

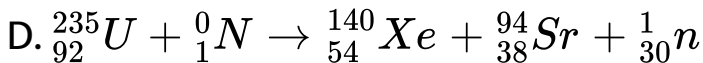
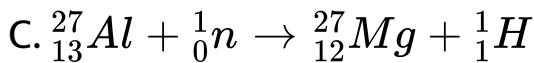
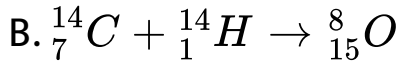
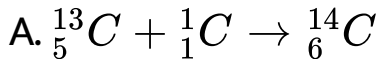
- A. mercuric oxide
- B. mercurous chloride
- C. mercuric chloric
- D. mercurous oxide

Answer: d



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25. Which of the following is an (n , p) reaction ?

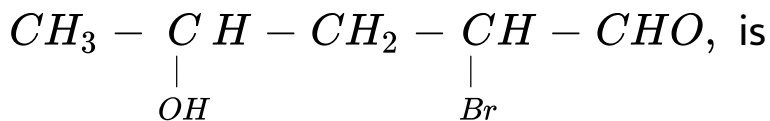


Answer: c



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26. The IUPAC name for the compound



- A. 2-bromo-5-hydroxy-1-hexanal
- B. 1-bromo-4hydroxy pentanal
- C. 2-hydroxy-5-bromo-6-hexanal
- D. None of these

Answer: a



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27. Total number of electrons present in 18 mL of water (density of water is 1 g/mL) is

A. 6.023×10^{25}

B. 6.023×10^{24}

C. $6.023 \times 18 \times 10^{23}$

D. 6.023×10^{23}

Answer: b



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28. The space of $CHCl_3$ molecule is

A. linear

B. pyramidal

C. tetrahedral

D. trigonal bipyramidal

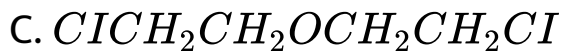
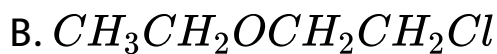
Answer: c



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29. Ethyl ether when reacted with chlorine in dark yields





Answer: d



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30. Which of the following acids is hydroxy acid ?

A. Maleic acid

B. Succinic acid

C. Lactic acid

D. Adipic acid

Answer: c



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31. Benzoic acid contains

A. 15σ and 2π - bonds

B. 15σ and 4π - bonds

C. 14σ and 4π - bonds

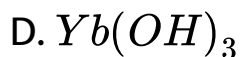
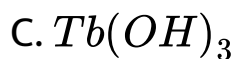
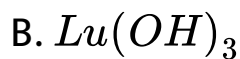
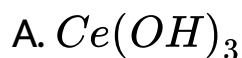
D. 13σ and 4π - bonds

Answer: b



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32. Which of the following is most basic ?



Answer: a



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33. On heating with conc. HNO_3 , proteins give yellow colour. This test is called

- A. oxidising test
- B. xanthoprotic test
- C. Hooper's test
- D. acid base test

Answer: b



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34. The unit of electrochemical equivalent is

A. $g / gram$

B. g / A

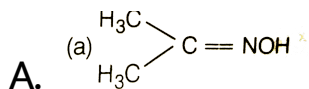
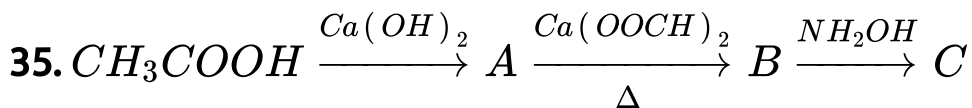
C. g / C

D. C / g

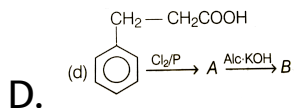
Answer: c



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C. $H_2C = CHNOH$

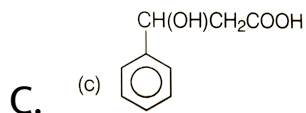
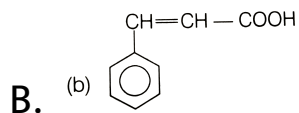
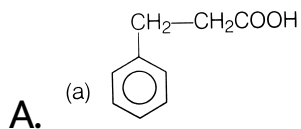


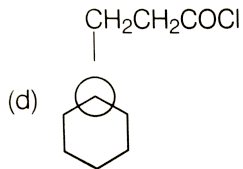
Answer: b



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36. Compound B is





D.

Answer: b



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37. Phenol and carboxylic acid can be distinguished by

A. Na

B. $NaHCO_3$

C. Both (a) and (b)

D. None of these

Answer: b



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38. When calcium acetate and calcium formate together is subjected to dry distillation , the product is

A. acetaldehyde

B. acetone

C. formaldehyde

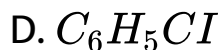
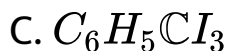
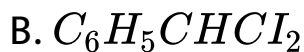
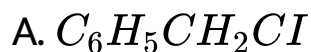
D. None of these

Answer: a



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39. Benzaldehyde can be obtained by the hydrolysis of
of



Answer: b



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40. The transition elements have

A. partly filled d - orbitals and completely filled

higher s - orbitals

B. completely filled d - orbitals and partly filled

higher s - orbitals

C. completely filled d - orbitals and completely

filled s - orbitals

D. All of these

Answer: d



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41. 8.2 L of an ideal weight 9.0 g at 300 K and 1 atm. pressure. The molecular mass of gas is

A. 9

B. 27

C. 54

D. 81

Answer: b



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42. For the reaction , $H_2(g) + Cl_2(g) \rightarrow 2HCl(g)$

The experimental data suggests

$$r = k[H_2][Cl_2]^{\frac{1}{2}}$$

The molecularity and order for the reaction is

A. 2 and $1\frac{1}{2}$

B. $1\frac{1}{2}$ and 0

C. $1\frac{1}{2}$ and 2

D. 2 and 2

Answer: a



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43. Secondary butyl chloride will undergo alkaline hydrolysis in the polar solvent by the mechanism

A. S_N2

B. S_N1

C. S_N1 and S_N^2

D. None of these

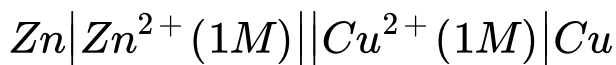
Answer: b





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44. The standard cell potential for the cell



Given $E_{\text{Cu}^{2+} / \text{Cu}}^{\circ} = 0.34\text{V}$ and $E_{\text{Zn}^{2+} / \text{Zn}}^{\circ} = -0.76\text{V}$

is

A. 1.10 V

B. -0.42V

C. -1.10V

D. None of these

Answer: a



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45. The decreasing acidic strength of a few of the acids $HCOOH$, CH_3COOH , and C_3H_7COOH is due to

- A. increase in + / effect due to alkyl group
- B. increase in - / effect due to alkyl group
- C. decrease in + / effect due to alkyl group
- D. increase in + M effect

Answer: a



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46. In a reaction , ${}^7_3\text{Li} + Z \rightarrow {}^7_4\text{Be} + {}^1_0\text{n}$, the bombarding projectile Z is

- A. α – particle
- B. deuteron
- C. neutron
- D. proton

Answer: d



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47. If the dissociation constants of two substances are K_1 and K_2 respectively, then the ratio of degree of dissociation for a given concentration, is given by

A. $\frac{K_1}{K_2}$

B. $\sqrt{\frac{K_1}{K_2}}$

C. $\frac{(K_1^2)}{K_2}$

D. $\frac{K_1 \cdot K_2}{K_2}$

Answer: b



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48. Tooth brush bristles are made up of

A. rayon

B. nylon - 66

C. dacron

D. All of these

Answer: b

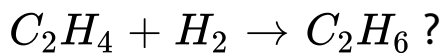


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49. The heat of combustion of ethane , ethylene and hydrogen are 372.79 kcal , 334.3.92 kcal and 68.4 kcal

respectively. What is the heat evolved in the reaction

?



A. $-32.61kcal$

B. $+32.61kcal$

C. $68.4kcal$

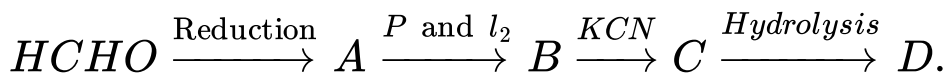
D. None of these

Answer: a



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50.



What is D ?

A. Acetic acid

B. Ethylamine

C. Acetamide

D. None of these

Answer: a



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