



CHEMISTRY

BOOKS - FULL MARKS CHEMISTRY

(TAMIL ENGLISH)

EXAMINATION QUESTION PAPER -

JUNE 2019

Part I

1. The type of H-bonding and intra ortho nitro phenol and -nitro phenol are
Respectively.

A. Inter molecular H-bonding and intra
molecular H-bonding

B. Intra molecular H-bonding and inter
molecular H-bonding

C. Intra molecular H-bonding and no H-
bonding

D. Intra molecular H-bonding and intra
molecular H-bonding

Answer:



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2. When an ideal gas undergoes unrestrained expansion, on cooling occurs because the molecules

A. are above the inversion temperature

B. exert on attractive force on each other

C. do work equal to the loss in kinetic energy

D. collide with loss of energy

Answer:



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3. Among the following statements, which one is/are correct?

(i) During cyclic process the amount of heat

absorbed by the surrounding is equal to work done on the surrounding.

(ii) Refractive index is an example for intensive property.

(iii) If the enthalpy change of a process is positive then the process is spontaneous.

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A. (i),(ii),(iii)

B. (i),(iv)

C. (ii),(iv)

D. (ii)only

Answer:



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4. Assertion: Mixture of carbon tetrachloride and chloroform show positive deviation Raoult's law.
Reason: In the mixture, the intermolecular force of attraction between chloroform and carbon tetrachloride is weaker

than those between molecules of carbon tetrachloride and chloroform molecules

A. Both assertion and reason are correct and reason is the correct explanation of assertion.

B. Both assertion and reason are correct and reason is not the correct explanation for assertion.

C. Both assertion and reason are false.

D. Assertion is true, but reason is false.

Answer:



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5. Shape and hybridisation of IF_5 are.....

A. Trigonal bipyramidal , sp^3d^2

B. Trigonal bipyramidal, sp^3d

C. Square pyramidal, sp^3d^2

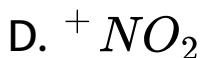
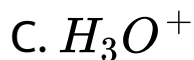
D. Octahedral sp^3d^2

Answer:



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6. Which of the following species is not electrophile in nature?



Answer:



7. group is ortho para directing and deactivating group,

A. amino

B. methyl

C. halogen

D. aldehyde

Answer:



8. The raw material for Rasching process is.....

A. chloro benzene

B. phenol

C. benzene

D. anisole

Answer:



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9.cause kidney damage.

A. Cadmium, Mercury

B. Lead, Cadmium

C. Freon, Fluoride

D. Copper, Cadmium

Answer:



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1. What is syn gas? How it is prepared?

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2. Write any two similarities between beryllium and aluminum

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3. What is inversion temperature?



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4. What is the effect of added inert gas on the reaction of equilibrium?

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5. Linear form of carbon dioxide molecule has two polar bonds. Yet the molecule has zero dipole moment. Why?

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6. How do you detect the presence of nitrogen and sulphur together in an organic compound?



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7. What happens when acetylene undergoes ozonolysis ?



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8. What is Green chemistry ?



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9. Calculate the orbital angular momentum for d and f orbital.



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1. What do you understand by the term mole ?



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2. Ionisation potential of nitrogen is greater than that of oxygen . Explain by giving appropriate reason.



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3. Among the alkali metal halides, which is covalent? Explain with reason.

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4. Derive ideal gas equation.

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5. Define molar heat capacity. Give its unit.

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6. What is vapour pressure of a liquid? What is relative lowering of vapour pressure?



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7. Explain a suitable method for purifying and separating liquids present in a mixture having very close boiling point



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8. What is polymerisation? Explain the two types of polymerisation reaction of acetylene.



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9. The bond length between all the four carbon atoms is same in 1, 3 - butadiene. Explain with reason.



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10. (1) What are auto redox reactions? Give example.

(ii) Define orbital. What are the n and l values of $3p_x$ and $4d_{x^2 - y^2}$ electron?



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11. (i) Why hydrogen peroxide is stored in plastic containers, so in glass container

(ii) Give the general electronic condition of lanthanides and actinides.





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Part Iv

1. (i) Why blue colour appears during the dissolution of alkali metals in liquid ammonia?

(ii) What is Boyle's temperature? What happens to real gases above and below the Boyle's temperature?



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2. (i) Derive the relation between K_p and K_c for general homogeneous gaseous reaction.

(ii) How do you measure heat changes of a constant pressure ?



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3. Draw the M.O diagram of oxygen molecule. Calculate its bond order and magnetic character.

(ii) Draw and explain the graph obtained by

plotting solubility versus temperature for calcium chloride.



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4. Write the IUPAC name of the following compounds :

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5. Explain about inductive effect.

(ii) What do you mean by conformation ?

Explain about staggered conformation in ethane .



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6. Among the following compounds, o-dichloro benzene and p-dichloro benzene, which has higher melting point ? Explain with reason.

(ii) Write notes on the adverse effect caused by ozone depletion.



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7. (i) Calculate the uncertainty in the position of an electron, if the uncertainty in its velocity is $5.7 \times 10^5 \text{ms}^{-1}$

(ii) What is the mass of glucose ($C_6H_{12}O_6$) in it one litre solution which is isotonic with 6gl^{-1} of urea (NH_2CONH_2)?



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8. (i) An organic compound (A) of molecular formula $C_2H_6O_7$ on heating with conc. H_2SO_4 gives compound (B). (B) on treating with cold dilute alkaline $KMnO_4$ gives compound (C). Identify (A), (B) and (C) and explain the reactions.

(ii) A simple aromatic hydrocarbon (A) reacts with chlorine to give compound (B). Compound (B) reacts with ammonia to give compound (C) which undergoes carbylamine reaction. Identify (A), (B) and (C) and explain the reactions.



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