PARUL UNIVERSITY
PARUL INSTITUTE OF APPLIED SCIENCES
MID SEMESTER INTERNAL EXAMINATION, APRIL 2017
B. Sc.(Chemistry/Physics/Applied Mathematics) Semester II

Paper Code:11105151   Subject: Chemistry
Date: 10 /04/2017   Title of the paper: Chemistry-II
Maximum Marks: 40   Time: 12.30 p.m. to 02.00 p.m.
Instructions:
1. **All questions are compulsory and options are given in first and second question only.**
2. **Numbers to the right of question indicate the marks of respective question.**

Q. 1   Attempt **any one** question of the following.   **(08)**
            (i) Derive Schrodinger wave equation?
            (ii) Explain 4 reactions of alkenes giving alcohol as product which
            follows Markovnikov's Rule

Q. 2   Attempt **any three** questions of the following.   **(12)**
            (i) Explain Isomerism of Alkenes
            (ii) Explain Oxidative and Reductive Ozonolysis of Alkenes
            (iii) Write any two methods for preparation of Alkynes along with
            reaction
            (iv) Explain comparative study of P-Block elements w.r.t. Ionization
            Energy and Electron Affinity
            (v) Write short note on f-centres?

Q. 3   Do as directed. **Attempt all five questions.**   **(05)**
            (i) Draw shapes of P orbital
            (ii) Give structural formula of pent-2-ene, 3-methyl-hex-1-yne
            (iii) Define Ionization Energy
            (iv) Give electron configuration of P_{15} & Ar_{18}
            (v) $CH_2Br-CH_2Br + Zn \rightarrow$?

Q. 4   Write correct option in your answer sheet for following 15 multiple   **(15)**
            choice questions.

MCQ 1   Einstein's Mass Energy Relationship is _____
            (A) $E=mc^2$ (B) $E=m^2c^2$
            (C) E=mc   (D) $E=m^2c$
MCQ 2   de Broglie's Equation is _____
            (A) $E=mc^2$ (B) $\Lambda = h/p$
            (C) $\Delta x.\Delta p \approx h/4\pi$ (D) None of above
MCQ 3   d-orbital can accommodate _____ number of electrons
            (A) 2   (B) 10
            (C) 6   (D) 14

MCQ 4   Azimuthal Quantum number represents _____
    (A)   Shells   (B)   Energy
    (C)   Subshells   (D)   None of above

MCQ 5   Energy absorbed by the body is in the form of _____
    (A)   photons   (B)   quanta
    (C)   waves   (D)   Energy

MCQ 6   's' orbital in Quantum number stands for _____
    (A)   sharp   (B)   sufficient
    (C)   strong   (D)   simple

MCQ 7   Which orbital does not exists?
    (A)   1p   (B)   2p
    (C)   3p   (D)   4p

MCQ 8   Describe the orbital having Quantum numbers n=2, l=1, m=1
    (A)   2s   (B)   2p
    (C)   2d   (D)   2f

MCQ 9   If hydrogen and alkenes are passed over a finely divided nickel, it gives _____
    (A)   alcohol   (B)   aldehydes
    (C)   alkanes   (D)   ketones

MCQ 10 Alcohols are produced by passing alkenes through _____
    (A)   Steam   (B)   Base
    (C)   Acid   (D)   alkali

MCQ 11 Alkenes when undergoes Hydroboration-Oxidation reaction it follows_____
    (A)   Saytzeff's Rule   (B)   Anti-Markovnikov's Rule
    (C)   Markovnikov's Rule   (D)   None of above

MCQ 12 Addition of H_2 to 2-Butyne under Lindlar catalyst gives _____
    (A)   Trans-but-2-ene   (B)   Cis-but-2-ene
    (C)   But-1,2-diene   (D)   But-1-ene

MCQ 13 Due to presence of double bond alkenes are _____
    (A)   Saturated   (B)   Polar
    (C)   Unsaturated   (D)   Non Polar

MCQ 14 Schottky defect arises due to _____
    (A)   Absence of cation & anion   (B)   Absence of anion
    (C)   Absence of cation   (D)   None of above

MCQ 15 Heisenberg's uncertainity principle is applicable to _____
    (A)   gases   (B)   Macroscopic particles
    (C)   Microscopic particles   (D)   None of above

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