

**SHIVAJI UNIVERSITY, KOLHAPUR**

**INTERNAL TEST (July 2021)**

**B. Sc Part III (Semester VI)**

**Paper XV DSE-E7 Physical Chemistry**

**Time:- 1 hour**

**Marks: 10**

**Name of the Student:**

**Roll No.:**

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1] .....are the reciprocals of the Weiss indices.

a] Lattice plane

b] **Miller indices**

c] Lattice site

d] space lattices

2] If the plane cuts the two co-ordinate axis and is parallel to a third axis then it is called as ..... plane.

a] Cubic

b] Cubic diagonal

c] Horizontal

d] **Diagonal**

3] Free centered cubic lattice is associated with ..... structural unit 6 384reaction.

a] 6

b] 3

c] 8

d] **4**

4] The diffraction of X-rays is possible by means of -----

a] Molecule

b] **Crystal**

c] Atoms

d] None of these

5] The total number of planes, axis and center of symmetry is called as..... of symmetry of the crystal

a] **Elements**

b] Planes

c] Axis

d] Center

6] The position occupied by a point or particle in a crystal lattice is called as.....

a] Sit point

b] Lattice point

c] **Both 'a' and 'b'**

d] None of These

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7] Which of the following are the Miller indices of the crystal plane cuts through the crystal axes

at 2a, 3b, 3c respectively are .....

a] (2 3 3)

b] (3 2 3)

c] **(3 2 2)**

d] (4 3 3)

8] A crystal plane intercepts the three crystallographic axes at 2a, 5/2b, and  $\infty$  respectively. Then

which of the following are Miller indices of the plane.

a] **(5 4 0)**

b] (5 4  $\infty$ )

c] (4 5 3)

d] (4 3 3)

9] The reactions in which the products of a chemical change react to form the original reactants

are known as..... reactions.

a] Chain reactions

b] Parallel reactions

c] Side reactions

d] **Opposing reactions**

10] The hydrolysis of ethyl acetate in aqueous solution is in which type of the following reaction.

a] **forward reaction 1<sup>st</sup> order backward reaction 2<sup>nd</sup> order**

b] forward reaction 2<sup>nd</sup> order backward reaction 1<sup>st</sup> order

c] Both forward and backward reaction 1<sup>st</sup> order

d] Both forward and backward reaction 2<sup>nd</sup> order

11] The chemical reactions which process from reactants to products through one or more intermediate stages are called .....

a] Constructive reactions

b] Successive reactions

c] **both 'a' and 'b'**

d] none of these

12] The propagation of chain reactions occur through further generation of chain carriers are called.....

a] **branched chain reactions**

b] Successive chain reactions

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- c] both 'a' and 'b' d] none of these
- 13] Which of the following is not a part of the chain reaction
- a] chain initiation b] chain propagation
- c] chain termination d] **none of these**
- 14] For spontaneous process  $\Delta S$  is .....
- a] **always positive** b] always negative
- c] less than zero d] greater than zero
- 15] The term fugacity has the dimensions of ...
- a] Temperature b] Volume
- c] **Pressure** d] Length
- 16] The maximum work obtainable in a gaseous reversible reaction can be determined by using .....
- a] **Von't Hoff equilibrium box** b] Stark Einstein equilibrium box
- c] both 'a' and 'b' d] none of these
- 17] Which of the following relation is correct for Gibbs free energy change
- a]  $\Delta G = \Delta A + P\Delta V$  b]  $\Delta G = \Delta A + V\Delta P$
- c]  $\Delta G = \Delta P + A\Delta V$  d]  $\Delta G = \Delta E + P\Delta V$
- 18] If  $dG = VdP - SdT$ , at constant pressure  $dP = 0$ , then which of the following relation is correct?
- a]  $(dG)_p = -V (dT)_p$  b]  $(dG)_p = -S (dT)_p$
- c]  $(dG)_p = -S (dV)_p$  d]  $(dG)_v = -S (dT)_p$
- 19] If the reaction is carried out at constant volume then Gibbs Helmholtz equation takes the form as.....
- a]  $\Delta A = \Delta P + T(d\Delta P/dT)_v$  b]  $\Delta A = \Delta P + P(d\Delta T/dT)_v$
- c]  $\Delta A = \Delta E + T(d\Delta A/dT)_v$  d]  $\Delta A = \Delta E + T(d\Delta E/dT)_v$



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