

# KVPY 2022 SB/SX Unofficial Answer Key

## **Chemistry**

Q1) SI is present in CCP and also in alternate tetrahedral voids. Find packing efficiency of the unit cell.

A1) 34%

Q2) SP<sup>3</sup>D<sup>2</sup> hybridisation is present in which of the following molecules?

A2) XeOF<sub>4</sub>

Q3) Compare heat of combustion H<sub>2</sub>, Octane, LPG

A3) Octane > LPG > H<sub>2</sub>

Q4) End centered lattice properties

A4)  $a \neq b \neq c$  and  $\alpha = \beta = \gamma = 90^\circ$

Q5) When Cu is added to conc. H<sub>2</sub>SO<sub>4</sub>, one of the products produced is CuSO<sub>4</sub> and the other sulphur containing product is?

A5) SO<sub>2</sub>

Q6) Phenyl magnesium bromide reacted with X to form benzyl alcohol. Find X

## **Biology**

Q1) Which of the following about viruses is incorrect?

A1) They contain nucleus and cytoplasm

Q2) Which of the following is an example of 'Mullerian Mimicry'?

A2) Two venomous snakes which resemble each other.

Q3) A species will face maximum chances of extinction under which condition?

A3) Higher frequency of homozygosity

Q4) The energy provided by the Sun source is 100 KJ, then in the nature of trophic level of three including plants, deer and tiger. Then the energy at the level of the tiger is?

A4) 10 J

Q5) Which of the following vitamins are fat soluble?

Q6) Cell doing Karyokinesis but not cytokinesis is known as

A6) Syncytium

Q7) In Garreau's protometer the sensor used is Calcium Chloride. Which compound can replace Calcium Chloride in this experiment?

A7)  $MgCl_2$

Q8) Which of the following is not an enzyme catalysed process?

A8) Diffusion of gas in alveoli

## **Biology**

Q1) Let AB be the diameter of semicircle. The locus of the centre of circle which are tangent to AB and to S is an arc of

A1) Parabola

Q2)  $f(x) + f(2x) = 0$ , R number of such  $f(x)$  is

A2) 1

Q3) A student has done exactly 5 questions correct out of 8 questions which has 4 options and only one correction. In how many ways is it possible?

A3) 1512

## **Physics**

Q1) A man is standing on a wooden plank and touches the following, from which does he draw the most current?

A1) Household live wire and neutral (220V)