Chemistry

Question 1: Which one of the following molecules has the smallest bond angle?

1. NH_3
2. H_2Se
3. H_2S
4. PH_3

Question 2: The addition of arsenic to germanium makes the latter a:-

1. Extrinsic semiconductor
2. Metallic conductor
3. Intrinsic semiconductor
4. Mixed conductor

Question 3: For an ideal binary liquid solution with $p°A > p°B$, which of the following relations between xA (mole fraction of A in liquid phase) and yA (mole fraction of A in vapor phase) is correctly represented?

1. $xA > yA$
2. $xA = yA$
3. $xA < yA$
4. xA and yA cannot be correlated with each other

Question 4: In the reaction, $3Cl_2 + 6NaOH \rightarrow NaClO_3 + 5NaCl + 3H_2O$ The element which loses as well as gains electrons is:-

1. CL
2. Na
3. O
4. None of the above

Question 5. An element has three elements in the 4th shell, the atomic number of the elements is:-

1. 27
2. 21
3. 13

4. 31

Physics

Question 1 The photoelectric effect was discovered by:-

1. Einstein
2. Hertz
3. Millikan
4. Halwachs

Question 2 An electron, a proton and a deuteron and an α-particle have the same linear momenta. Which one of them possesses least kinetic energy?

1. Electron
2. Deuteron
3. α-particle
4. Proton

Question 3 Three equal masses P, Q and R pulled with a constant force F. They are connected to each other with strings. The ratio of the tension between PQ and QR is:-

1. 2:1
2. 1:2
3. 3:1
4. 1:1

Question 4 To avoid slipping while walking on ice one should take larger steps because of the:-

1. Larger normal reaction
2. Smaller normal reaction
3. Smaller friction
4. Larger friction

Question 5 If the Earth shrinks in its radius by 4%, mass remaining the same, the value of 'g' on its surface:-

1. Remains constant

2. Decreases by about 8%
3. Increases by about 8%
4. Decreases by about 4%

Mathematics

Question 1 If a, b, c are in A.P. and p, p' are the A.M. and G.M. respectively between a and b while q,q' are the A.M. and G.M. respectively between b and c, then:-

1. pq = p' q'
2. $p_2 + q_2 = p'_2 + q'_2$
3. $p_2 - q_2 = p'_2 - q'_2$
4. None of the above

Question 2 The number of ways in which different flowers can be strung to form a garland so that 4 particular flowers are never separated is:-

1. 288
2. 5! . 4!
3. 4! . 4!
4. 0

Question 3 The chance of throwing a total of 3 or 5 or 11 with two dice is:

1. 5/36
2. 1/9
3. 2/9
4. 19/36

Question 4 The distance of the point (x, y) from x-axis is:-

1. |x|
2. y
3. x
4. d)|y|

Question 5 The mean of 50 observations is 36. If two observations 30 and 42 are deleted, then the mean of the remaining observations is:-

1. 36
2. 48
3. 38
4. None of the above

Biology

Question 1 Seeds swell when placed in water due to:-

1. Transpiration
2. Imbibition
3. Hydrolysis
4. Osmosis

Question 2 Which of the following combinations is correct?

1. Lipase - Ester bond
2. Protease - Phosphodiester bond
3. Nucleases - Glycosidic Bond
4. Amylase - Peptide bond

Question 3 Proteins embedded in the cell membrane function to:-

1. Produce energy for the cell
2. Transport materials in and out of the cell
3. Carry genetic information
4. Store excess water

Question 4 Which of the following is not a STOP codon?

1. Opal
2. Amber
3. Ochre
4. Gyro

Question 5 Who is known as the father of modern bee science?

1. Huber
2. Fahian

3. Whenson
4. Kurian

English

Question 1 Choose the correct verb to fill the gap.

By the end of the year, she _____ with a degree in business.

1. already graduates
2. already graduated
3. will have already graduated
4. has already graduated

Question 2 Choose the synonym for the following word Hallowed

1. Sacred
2. Old
3. Inactive
4. Effective

Question 3 As _____ cuts it as well as he does, I always have my hair cut at Johnson's.

1. anyone
2. someone else's
3. no one else
4. everyone

Question 4 Mohit _____ his century before it is the end of the match.

1. will score
2. will have scored
3. has scored
4. scores

Question 5 Which word is an adverb in this sentence?

There are no interesting programmes tonight.

1. interesting
2. programmes
3. there
4. tonight