NIMS UNIVERSITY RAJASTHAN, JAIPUR
Continuous Evaluation

B.Sc. General Science – 2nd Year
Chemistry - II

Maximum Marks: 30

Q.1 Write short notes on the following

1. Molecularity — 2 marks
2. Bond angle — 2 marks
3. Difference between ionic bond and covalent bond — 2 marks
4. Structure of chlorophyll — 2 marks
5. Diastereoisomers — 2 marks

Q.2 . State law of Rational Indices. — 5 marks

Q.3 . What are the characteristics of zero order reaction? — 5 marks

Q.4 . Write the molecular orbital diagram of O_2 molecule. — 5 marks

Q.5. Explain the MOT of CO, O_2 and HF molecules. — 5 marks

NIMS UNIVERSITY RAJASTHAN, JAIPUR
Continuous Evaluation

B. Sc. General Science (Mathematics) – 2nd Year
Statistics

Maximum Marks: 30

Q.1 Answer the following questions;

1. The grades of a student on six examinations were 84, 91, 72, 68, 87, and 78. Find the arithmetic mean of the grades. 2 marks

2. Write the *t* distribution and its properties with useful examples. 2 marks

3. Find the probability that in 120 tosses of a fair coin (a) less than 40% or more than 60% will be heads and (b) 5/8 or more will be heads. 2 marks

4. Find the critical values of t for which the area of the right-hand tail of the t distribution is 0.05 if the number of degrees of freedom, *v*, is equal to (a) 16, (b) 27, and (c) 200. 2 marks

5. Find the median value of X^2 corresponding to (a) 9, (b) 28, and (c) 40 degrees of freedom. 2 marks

Q.2 . In 360 tosses of a pair of dice, 74 sevens and 24 elevens are observed. Using the 0.05 significance level, test the hypothesis that the dice are fair. 5 marks

Q.3 . What is the minimum sample size necessary in order that we may conclude that a correlation coefficient of 0.32 differs significantly from zero at the 0.05 level? 5 marks

Q.4 . Mention the difference between Correlation and Regression with one example. 5 marks

The rank of ten students in two subjects A and B are given below

A	5	2	9	8	1	10	3	4	6	7
B	10	5	1	3	8	6	2	7	9	4

Calculate the coefficient of correlation

Q.5. Derive the relation among Mean, Mode and Median. 5 marks

Find mode of the following data

Ages:	20-25	25-30	30-35	35-40	40-45	45-50	50-55	55-60
No of works:	35	45	70	105	90	74	51	30

NIMS UNIVERSITY RAJASTHAN, JAIPUR
Continuous Evaluation

B. Sc. General Science – 2nd Year
Physics - II

Maximum Marks: 30

Q.1 Write short notes on the following

1.	Isospin	2 marks
2.	Semiconductor	2 marks
3.	Necessary and sufficient condition for diffraction	2 marks
4.	Fermi Level	2 marks
5.	BCS Theory	2 marks

Q.2 . Derive equation of motion for non rigid body. 5 marks

Q.3 . Explain Orude-pole theory. 5 marks

Q.4 . Give the appropriate model for lattice heat capacity. 5 marks

Q.5. Give the quantum free electron theory of metals in detail. 5 marks

NIMS UNIVERSITY RAJASTHAN, JAIPUR
Continuous Evaluation

B. Sc. General Science – 2nd Year
Fundamentals of Computer Science

Maximum Marks: 30

Q.1 Write short notes on the following

1.	ALU	2 marks
2.	CPU	2 marks
3.	HTML	2 marks
4.	Recycle Bin	2 marks
5.	Gigabyte	2 marks

Q.2 . Explain about the RAM and its types. 5 marks

Q.3 . How can you send and receive pictures via emails? 5 marks

Q.4 . What is desktop? Write down its function. 5 marks

Q.5. Discuss in detail how to work with paint in windows 7. Also, write down the procedure to crop and resize an image. 5 marks

NIMS UNIVERSITY RAJASTHAN, JAIPUR
Continuous Evaluation

B. Sc. General Science (Mathematics) – 2nd Year
Differential Equations

Maximum Marks: 30

Q.1 Answer the following questions;

1. Find a complete solution $z = pq$ — 2 marks

2. Solve $(1+q)^2 r - 2(1+p+q+pq)s + (1+p)^2 t = 0.$ — 2 marks

3. Explain D' Alembert's solution of wave equation. — 2 marks

4. Write down the Non-Linear equations of the second order. — 2 marks

5. Write Non-Homogeneous linear equations. — 2 marks

Q.2 . Prove that the Monge's method of integrating $Rr + Ss + Tt = v$. — 5 marks

Q.3 . Find the solution $\left(D^2 + 2DD' + D'^2 - 2D - 2D'\right)z = \sin(x+2y)$ — 5 marks

Q.4 . Solve $\frac{\partial^3 z}{\partial^3 x \partial y} + 18xy^2 + \sin(2x-y) = 0.$ — 5 marks

Q.5. Derive the Charpit's method, solve the complete integral of $p^2 - y^2 q = y^2 - x^2.$ — 5 marks