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PART-I

ENGLISH (50 MARKS)

Q. 23 Find pH and pOH of 0.0001 M Sulphuric acid.

- xi. Walking the path in wood is good exercise. The underline word is;
A. noun B. gerund C. verb D. adjective
- xii. This plant flowers once every year. The underlined phrase is:
A. adjective phrase B. noun phrase C. adverb phrase D. preposition phrase
- xiii. "I like chocolate because it is sweet and I like to take tea because it is delicious."
The above sentence is;
A. simple B. compound C. complex . compound complex
- xiv. Maria was feeling blue after her cat was hit by a car. The underlined word means;
A. Maria was confused B. Maria was angry
C. Maria was sad D. Maria wore blue dress
- xv. He is a victim of circumstances. The underlined word means;
A. suppressor B. helper C. sufferer D. supporter.

SECTION – B (Marks 16)

Q.2: Answer the following questions in about 30 to 40 words each. Each part carries equal marks. (2x 5=10)

(i) How does a book connect the reader and the writer? (A World without Books)

(ii) What should your first aid kit consist of? (First Aid)

(iii) What made the non-Muslim bring their suits to the Rasool (saw)? (Hazrat Muhammad the Embodiment of Justice)

(iv) How can career counselors help the young people? (Selecting the Right Career)

(v) How are water sources under great stress? (Population Growth and World Food Supplies)

Q.3: Read the following stanza carefully and answer the questions given at the end: (6)

I hear leaves drinking rain;
I hear rich leaves on top
Giving the poor beneath
Drop after drop;
'Tis a sweet noise to hear
These green leaves drinking near.

Questions:

(i) What according to the poet is a sweet noise?

(ii) Write the name of the poem and poet?

(iii) Explain the stanza with reference to the text

Q. 22: Write down five methods of preparation of salts with suitable example.

v. Explain acidic rain and its affects.

SECTION – C (Marks 20)

Note: Attempt All Questions. All questions carry equal marks.

(4x5=20)

Q. 21: Write two methods of preparation of alkenes with reactions.

SECTION – C (Marks 19)

Q.4: Translate the given sentences into English. (5)

(i) ہم نئی نشست میں اپنے مسائل پر تبادلہ خیال کریں گے۔

(ii) کتاب پڑھنا عظیم لوگوں کا طرز زندگی ہے۔

(iii) وہ شیر کی طرح تیز ہے۔

(iv) ناچ نہ جانے آنگن ٹیڑھا۔

(v) ہمیں اپنے آپ کو اپنی محنت سے ثابت کرنا چاہئے۔

Q.5: Translate the given sentences into Urdu. (5)

a. Today is a moonlit night.

b. His wishful thinking will ruin his life.

c. While in Rome do as the Romans do.

d. Students will spend wakeful nights in exam.

e. Do noble deeds, not dream them all the day.

Q.6: Write a story in the given space based on the prompt /sketch /picture and give it an appropriate title. Use the given space only to write your story. (9)

Suitable Title: _____ (1)

Plot	2
Diction	1
Language	2
Characters	2



Ali is a hardworking man. He is working day and night to meet his ends. He also contributes in the village social activities and

Lesson/Moral: _____ (1)

iii. Give the advantages of Solvay's process.

iv. Define pH. What is the pH of pure water?

- xiv. Which one of the following is not a fossil fuel?
- A. Coal B. Natural Gas C. Bio gas D. petroleum
- xv. Slaked lime is used in which method to remove hardness of water by?
- A. Boiling B. Crushing C. Clark's method D. Solvay's process

Section - B

Q. 20 Attempt all parts. All parts carry equal marks. (5x3=15)

i. Why BF_3 behaves as a Lewis acid?

ii. What are the disadvantages of water hardness?

PART-II

MATHEMATICS (50 MARKS)

SECTION – A (Marks 15)

Q.7: Insert the correct option i.e. A / B / C / D in the empty box provided opposite to each part. Each part carries one mark.

- i. The third proportional of x^2 and y^2 is:
- A. $\frac{y^2}{x^2}$ B. x^2y^2 C. $\frac{y^4}{x^2}$ D. $\frac{y^2}{x^4}$
- ii. An equation which remains unchanged when x is replaced by $1/x$ is called
- A. Exponential Equation B. Radical Equation
C. Reciprocal Equation D. None Of these
- iii. Formula for standard deviation is-----
- A. $\sum x$ B. $\frac{\sum fx}{\sum f}$ C. $\sqrt{\frac{\sum(x-\bar{x})^2}{n}}$ D. none of these
- iv. A histogram is a set of adjacent:
- A. Squares B. Rectangles C. Circles D. None
- v. The system of measurements in which the angle is measured in radian is called
- system.
A. CGS B. Sexagesimal C. MKS D. Circular
- vi. Through how many non-collinear points, can a circle pass?
- A. One B. Two C. Three D. None
- vii. If $a : b = c : d$ then , invertendo property is -----
- A. $\frac{a}{a+b} = \frac{c}{c+d}$ B. $\frac{a-b}{b} = \frac{c-d}{d}$ C. $\frac{a}{c} = \frac{b}{d}$ D. $\frac{d}{c} = \frac{b}{a}$
- viii. In (80-89), the class interval is
- A. 5 B. 80 C. 89 D. 10
- ix. $3\cos 45 + 4\sin 45 =$ -----
- A. $\frac{7}{\sqrt{2}}$ B. $\frac{2}{\sqrt{2}}$ C. $\frac{\sqrt{3}}{2}$ D. $\frac{\sqrt{7}}{2}$
- x. Area of circular sector A = _____
- A. $\frac{1}{2}r\theta^2$ B. $2\theta^2$ C. $\frac{1}{2}r^2\theta$ D. none of these
- xi. Product of cube roots of unity is:
- A. 0 B. 1 C. -1 D. 3
- xii. The tangent and radius of a circle at the point of contact are -----
- A. Parallel B. Not perpendicular C. Perpendicular D. none of these

SECTION – A (Marks 15)

Q. 19: Insert the correct option i.e. A / B / C / D in the empty box provided opposite each part. Each part carries one mark.

- i. Alcohol contains functional group_____.
- A. $-\text{COOH}$ B. $-\text{NH}_2$ C. $-\text{H}$ D. $-\text{OH}$
- ii. Which of the following is a Lewis base?
- A. BF_3 B. HCl C. AlCl_3 D. F
- iii. The general formula of carbohydrates is_____.
- A. $\text{C}_x(\text{H}_2\text{O})_y$ B. $\text{C}_x(\text{H}_2\text{O}_2)_y$ C. $\text{C}_{12}\text{H}_{22}\text{O}_{11}$ D. $\text{C}_6\text{H}_{12}\text{O}_6$
- iv. Percentage of oxygen in CaCO_3 is _____.
- A. 16 B. 32 C. 48 D. None
- v. Which one of the following gases is used to destroy harmful bacteria in water?
- A. Iodine B. Fluorine C. Chlorine D. Bromine
- vi. Chemical formula of Washing Soda is?
- A. NaHCO_3 B. Na_2CO_3 C. $\text{Na}_2\text{CO}_3 \cdot 10\text{H}_2\text{O}$ D. NaCO_3
- vii. Which one is blistering agent?
- A. Acetylene B. Phosphene C. Mustard gas D. Ozone
- viii. The reduction of alkyl halides takes place in the presence of:
- A. Zn/HCl B. Na/HCl C. Mg/HCl D. Cu/HCl
- ix. Which one of the following does not belong to alkaline earth metals?
- A. Be B. Rn C. Ba D. Ra
- x. A substance that donates a pair of electrons to form coordinate covalent bond is called_____.
- A. Lewis acid B. Bronsted-Lowry
C. Bronsted-Lowry acid. D. Bronsted-Lowry base
- xi. Alkenes are prepared from alcohols by the process of:
- A. Dehydrogenation B. Dehalogenation C. Dehydation D. Dehydrohalogenation
- xii. Which one of these pollutants are not found in car exhaust fumes?
- A. CO B. O_3 C. NO_2 D. SO_2
- xiii. which catalyst is used in hydrogenation?
- A. Water B. Nickel C. Chlorine D. Nitrogen

PART-IV

CHEMISTRY (50 MARKS)

- xiii. Sum of the deviation of the variable X from its mean is always:
A. Zero B. One C. Same D. None
- xiv. Mean is affected by change in
A. Value C. Ratio C. Origin D. None
- xv. The extent of variation between two extreme observations of a data set is measured by-----
A. Variance B. Standard Deviation C. Range D. Mean

SECTION – B (MARKS: 15)

Q 8. Attempt all parts. All parts carry equal marks. (5x3=15)

- i. Find the condition when the roots of the equation $(mx + c)^2 - 4ax = 0$ are equal.

- ii. Find p, if the roots of the equation $x^2 - x + p^2 = 0$ differ by unity.

Q.18: What are radioisotopes? Explain their uses in detail

(1+4)

iii. If $\cos\theta = \frac{-2}{3}$ and terminal side of the angle θ is in quadrant-II. Find the values of the remaining trigonometric functions.

iv. Find the Distance travelled by a cyclist moving on a circle of radius 15m if he makes 3.5 revolutions.

Blank lined area for writing answers.

Q.17: Define critical angle and Explain transmission of electrical signals through optical fiber.(1+4)

Blank lined area for writing answers to Q.17.

Blank lined area for writing answers.

v. Find third proportional in $(x - y)^2, x^3 - y^3$.

Blank lined area for writing answers to question v.

SECTION – C (MARKS: 20)

Note:- Attempt all question

(Marks 4x5 = 20)

Q.9 Show that $\sqrt{\frac{\sec\theta+1}{\sec\theta-1}} = \frac{\sec\theta+1}{\tan\theta}$

Blank lined area for writing answers to Q.9.

Q.10: Use synthetic division to find the value of l and m,if $(x + 3)$ and $(x - 2)$ are the factors of the polynomial $x^3 + 4x^2 + 2lx + m$.

Lined writing area for the answer to Q.10.

SECTION-C (MARKS: 20)

(1+4)

Q.15: What is SHM? Prove that for mass -spring system, $a \propto -x$?

Lined writing area for the answer to Q.15.

Q.16: What is specific resistance? Derive its equation.

(1+4)

Lined writing area for the answer to Q.16.

v. Tritium, ${}^3\text{H}_1$ is radioactive isotope of hydrogen. It decays by emitting an electron. ${}^3\text{H}_1$
What is the daughter nucleus?

Q.11: An observation balloon is 4280 meter above the ground and 9613 meter away from a farmhouse. Find the angle of depression of the farm house as observed from the observation balloon.

Q.12 Find the value of $\frac{m+5n}{m-5n} + \frac{m+5p}{m-5p}$, if $m = \frac{10np}{n+p}$

iii. Define Faraday Law of Electromagnetic Induction? Also mention the factors which affect induced e.m.f.

iv. What is electron gun? Describe the process of thermionic emission?

PART- III

PHYSICS (50 MARKS)

MCM

16

SECTION – A (Marks 15)

Q.13: Insert the correct option i.e. A / B / C / D in the empty box provided opposite each part. Each part carries one mark.

- i. What will be the time period of a pendulum 1.0 m long at a location where $g = 10.0 \text{ ms}^{-2}$
A. 1.99 s B. 2.99 s C. 3.99 s D. 4.99 s
- ii. If the length of simple pendulum is halved, the time period will become
A. $T/2$ B. $T/\sqrt{2}$ C. $\sqrt{2}T$ D. $2T$
- iii. Loudness of a sound depends upon.
A. Frequency B. period C. amplitude D. wavelength
- iv. If at Anarkali Bazar Lahore, intensity level of sound is 80 dB, what will be the Intensity of sound there?
A. 10^{-4} W m^{-2} B. 10^{-6} W m^{-2} C. 10^{-2} W m^{-2} D. 10^{-3} W m^{-2}
- v. When a suitable resistance is connected in series with the galvanometer, it is converted into a/an;
A. Ammeter B. Voltmeter C. Avometer D. Electroscop
- vi. The combined resistances of two identical resistor connected in series is 8Ω . Their combined resistance in a parallel arrangement will be:
A. 2Ω B. 4Ω C. 8Ω D. 12Ω
- vii. Fuse is always connected in series with----- wire.
A. Earth B. Live C. Neutral D. All of these
- viii. The electric potential at a point in an electric field is 10 V. If a charge of $+100 \mu\text{C}$ is brought from infinity to this point. What would be the amount of work done on it?
A. 1 J B. 2 J C. 3 J D. 4 J
- ix. If the length of copper wire is 1 m and its diameter is 2 mm, then what will be the resistance of this copper wire.
A. $R = 5.4 \times 10^{-3} \Omega$ B. $R = 5.4 \times 10^{-2} \Omega$ C. $R = 5.4 \times 10^{-4} \Omega$ D. $R = 5.4 \times 10^{-5} \Omega$
- x. AND gate can be formed by using two;
A. NOT gates B. OR gates C. NOR gates D. NAND gates
- xi. If the current in a wire which is placed perpendicular to a magnetic field increase, the force on the wire
A. increases B. decreases C. remains the same D. will be zero
- xii. When four hydrogen nuclei fuse together to form helium nucleus, amount of energy released is;
A. 36 MeV B. 25.7 MeV C. 200 MeV D. 931 MeV

MCM

17