

Lined writing area with 24 horizontal lines.

**PART-I**

**ENGLISH (50 MARKS)**

**SECTION – A (Marks 15)**

**Q.1** Insert the correct option i.e. A / B / C / D in the empty box opposite to each part.

**Each part carries one mark.**

- i. The accident was due to his ruthlessness. The underlined word is \_\_\_\_\_ noun.   
A. relative B. concrete C. abstract D. reflexive
- ii. Choose correct spelling.   
A. trusty B. trusti C. trustee D. trustee
- iii. The remarkable and talented boy won a scholarship. The under lined word is \_\_\_\_\_ phrase.   
A. noun B. adverbial C. adjective D. prepositional
- iv. The synonym for “detached” is \_\_\_\_\_.   
A. isolate B. attest C. touch D. stay away
- v. “Camel is the ship of desert”, Which poetic device is used.   
A. personification B. metaphor  
C. onomatopoeia D. idiom
- vi. ‘The watchman blew his whistle.’ The under word is a/an   
A. transitive verb B. intransitive verb  
C. regular verb D. infinite verb
- vii. A verb that describes physical or mental action is called \_\_\_\_\_.   
A. linking verb B. main verb  
C. helping verb D. none
- viii. What is antonym of anguish?   
A. polite B. hatred C. soft D. delight
- ix. He asked me \_\_\_\_\_ very hard question.   
A. a B. an C. the D. none of these
- x. “Life is but a walking shadow” is an example of:   
A. personification B. simile  
C. metaphor D. alliteration
- xi. I believe that if you lower taxes so that people can keep more of the money they earn, it will be \_\_\_\_\_ for them to work harder.   
A. an incentive B. a protection C. an option D. a facility

**Q. 24:** Explain Solvay Ammonia process in detail.

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**Q. 23:** Write down the chemistry of Bayer's Test. How you can convert Alkenes into Ethylene glycol & Alkynes into oxalic acid?

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- xii. "The United Nations often tries to \_\_\_\_\_ in conflicts between countries". Choose the word with correct spellings to fill in the blank?
- A. entercede B. intercede C. intercede D. interscede
- xiii. Well, I don't think I will be home before 6 O'clock. The underlined word is a/an
- A. interjection B. prepositional C. adjective D. gerund
- xiv. If he came to me, I would help him. Which conditional sentence is it?
- A. 1st B. 2nd C. 3rd D. Zero
- xv. Supposing if/ it rains/ what shall/ we do? Detect error.
- A. Supposing if B. it rains C. what shall D. we do

**SECTION – B (Marks 16)**

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

(i) How do newspapers give us in-depth coverage? (Television Vs Newspapers)

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(ii) What kind of student is the writer? Which of his qualities impress you? (Little By Little One Walks)

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(iii) What is the use of card catalogue? (A World Without Books)

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(iv) What are the factors responsible for diverting people's attention from books? (A World Without Books)

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

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

And when the sun comes out,  
After the rain shall stop,  
A wondrous light will fill  
Each dark, round drop;  
I hope the sun shines bright;  
It will be a lovely sight.

**Questions: (3 x 2)**

(i) What will happen after the rain stops?

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

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**Q. 22: What is soft and hard water? write types of soft and hard water.**

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v. State conditions of equilibrium?

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**SECTION – C (Marks 20)**

**Note: Attempt All Questions. All questions carry equal marks. (4x5=20)**

**Q. 21:** Explain different metallurgical operations in industry.

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(iii) Explain the stanza with reference to the context.

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**SECTION – C (Marks 19)**

**Q.4: Translate the given sentences into English. (1 x 5 = 5)**

(i) ہمیں اپنے آپ کو اپنی محنت سے ثابت کرنا چاہیے۔

(ii) نو نقد نہ تیر اُدھار

(iii) میں نے اس کا مزاق نہیں اڈایا۔

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

(v) لوگوں کے نعرے لگانے سے پہلے پولیس نے لاٹھیاں کیوں برسائی تھیں؟

**Q.5: Translate the given sentences into Urdu. (1 x 5 = 5)**

a. What world are you living in?

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b. The squeaky wheel gets the grease.

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c. Is PTV broadcasting live cricket match?

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d. All lay loads on a willing horse.

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e. No act of kindness, no matter how small, is wasted ever.

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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



Naila was coming back from school. Suddenly.....

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Lesson/Moral: \_\_\_\_\_ (1)

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iii. Define Vitamin and types of Vitamins.

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iv. Define ozone depletion & how it deplete? Write down the chemical reactions.

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- xiii. Troposphere extends up to\_\_\_\_\_.  
 A. 50Km      B. 12Km      C. 18Km      D. 80Km
- xiv. Acid rain is defined as rain having pH less than;  
 A. 5.4      B. 5.6      C. 5.7      D. 5.8
- xv. Which one of the following is not a water born disease?  
 A. Hepatitis      B. Typhoid      C. Dysentery      D. Anemia

**Section - B (Marks 15)**

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

- i. Write five disadvantages of hard water.

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- ii. Determine Kw of water.

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**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. If  $y = 2^x$  and  $8y = 1$  then the value of  $x$  is:
- A. 1                      B.  $\frac{1}{8}$                       C. -3                      D. 3
- ii. A quadratic equation with roots 3 and 4 is:
- A.  $x^2 - 7x + 12 = 0$                       B.  $x^2 + 7x + 12 = 0$   
 C.  $x^2 - 7x - 12 = 0$                       D.  $x^2 + 7x - 12 = 0$
- iii. How many circles can pass through three non-collinear points:
- A. one                      B. Two                      C. Three                      D. none
- iv. If two circles with radii 6cm and 2cm touch externally, then the distance between their centers will be:
- A. 8cm                      B. 4cm                      C. 6cm                      D. 3cm
- v. 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.  $\frac{y^2}{x^4}$
- vi. The length of a chord and radial segment of a circle are congruent, their central angle made by the chord will be:
- A.  $3^\circ$                       B.  $45^\circ$                       C.  $60^\circ$                       D.  $75^\circ$
- vii.  $\frac{1}{1+\sin\theta} + \frac{1}{1-\sin\theta} =$
- A.  $2\sec^2\theta$                       B.  $2\cos^2\theta$                       C.  $\operatorname{cosec}\theta$                       D.  $\sec^2\theta$
- viii. The spread of scatterness of the observation in data is:
- A. Frequency distribution                      B. Central tendency  
 C. Dispersion                      D. None of these
- ix. If  $a:b = x:y$  then alternando property is:
- A.  $\frac{a}{x} = \frac{b}{y}$                       B.  $\frac{a}{b} = \frac{x}{y}$   
 C.  $\frac{a+b}{b} = \frac{x+y}{y}$                       D.  $\frac{a-b}{x} = \frac{x-y}{y}$
- x. 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.  $\frac{d}{c} = \frac{b}{a}$
- xi. 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

**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. Rate at which a substance reacts is directly proportional to its\_\_\_\_\_.
- A. Product                      B. Active mass                      C. Reactant                      D. None
- ii. Specie which is able to donate a proton is called\_\_\_\_\_.
- A. Acid                      B. Base                      C. Neutral compound                      D. Cation
- iii. Which of following is used as a fuel for buses, trucks and trains?
- A. Diesel                      B. Lubricating oil                      C. Fuel oil                      D. Bitumen
- iv. A substance that donates a pair of electrons to form coordinate covalent bond is called\_\_\_\_.
- A. Lewis acid                      B. Lewis base  
 C. Bronsted-Lowry acid                      D. Bronsted-Lowry base
- v. Molecular formula of ethane is \_\_\_\_\_.
- A.  $\text{CH}_4$                       B.  $\text{C}_2\text{H}_6$                       C.  $\text{C}_3\text{H}_8$                       D.  $\text{C}_4\text{H}_{10}$
- vi. Hardness that cannot be removed by boiling is called\_\_\_\_\_.
- A. Temporary hardness                      B. Permanent hardness  
 C. Both A and B                      D. None of these
- vii. Chemical formula of slaked lime is \_\_\_\_\_.
- A.  $\text{CaCO}_3$                       B.  $\text{CaO}$                       C.  $\text{Ca(OH)}_2$                       D.  $\text{Na}_2\text{CO}_3$
- viii. Which one of the following is aldose sugar?
- A. Cellulose                      B. Fructose  
 C. Glucose                      D. Mannose
- ix. In the reaction of  $\text{CH}_3\text{Cl} + 2[\text{H}] \xrightarrow{\text{Zn/HCl}} ?? + ??$  the product is?
- A.  $\text{CH}_3\text{Zn}$                       B.  $\text{CH}_4 + \text{HCl}$   
 C.  $\text{CH}_2\text{Cl}_2$                       D. None
- x. Which functional group is present in Ethyl Ethanoate?
- A. Aldehyde                      B. Ketone                      C. Ether                      D. Ester
- xi. Unit of equilibrium constant for  $\text{H}_2 + \text{CO}_2 \rightarrow \text{H}_2\text{O} + \text{CO}$  is \_\_\_\_\_.
- A. No units                      B.  $\text{mol dm}^{-3}$   
 C.  $\text{dm}^3\text{mol}^{-1}$                       D. None of these
- xii. Phenolphthalein in acidic solution.
- A. Colorless                      B. Pink colored  
 C. Yellow colored                      D. Orange colored





Q.18: Define CBIS. Also explain its components in detail.

(1+4)

Lined area for writing the answer to Q.18.

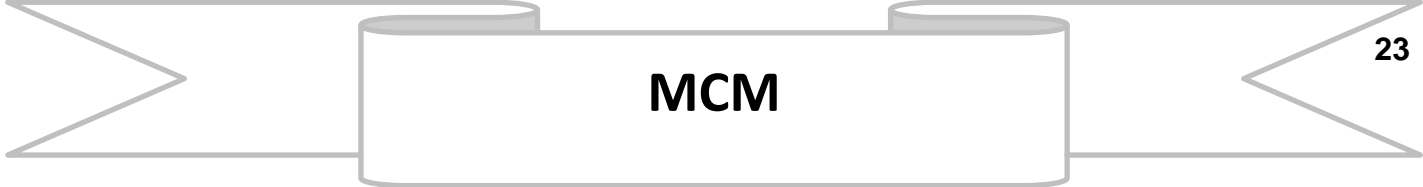
iii. The marks of six students in mathematics are as follows. Determine variance.

Student no	1	2	3	4	5	6
Marks	60	70	30	90	80	42

Lined area for writing the answer to question iii.

iv. Define K-Method and joint variation with example.

Lined area for writing the answer to question iv.



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**Q.17:** An ideal transformer changes 200 V A.C. into 5 V A.C. There are 5000 turns in the primary coil. **(2 + 2 = 4)**  
(a) Find the number of turns in the secondary coil.  
(b) If the given transformer is of 10 W, find the current in both coils.

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v. Resolve  $\frac{1}{3+x-2x^2}$  into partial fractions.

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**SECTION - C (MARKS : 20)**

**Note:- Attempt all question** **(4 x 5 = 20)**

**Q.9** Solve the equations  
 $x^2 + y^2 = 40$  and  $3x^2 - 2xy - y^2 = 80$

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Q.10: In a parallelogram  $ABCD$  prove that  $(AC)^2 + (BD)^2 = 2[(AB)^2 + (BC)^2]$

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**SECTION-C (MARKS: 20)**

Q.15: Define Nuclear Transmutation. Explain  $\alpha$  and  $\beta$  decay by means of equations. Also give example for each decay. **(1+4)**

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Q.16: “In SHM acceleration is directed towards the mean position”. Prove this statement. **(1+4)**

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v. Under what conditions will a converging lens form a virtual image? Show with ray diagram.

**Q.11:** Use synthetic division to find the value of  $l$  and  $m$ , if  $(x+3)$  and  $(x-2)$  are the factors of the polynomial  $x^3 + 4x^2 + 2lx + m$ .

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**Q.12:** From an observation point, the angle of depression of two boats in line with the point are found to be  $30^\circ$  and  $45^\circ$  .Find the distance between the two boats if the point of observation is 4000 feet high.

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iii. How much negative charge has been removed from a positively charged electroscope if it has a charge of  $7.5 \times 10^{-11}$  C?

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iv. A convex mirror is used to reflect light from an object placed 66 cm in front of the mirror. The focal length of the mirror is 46 cm. Find the location of

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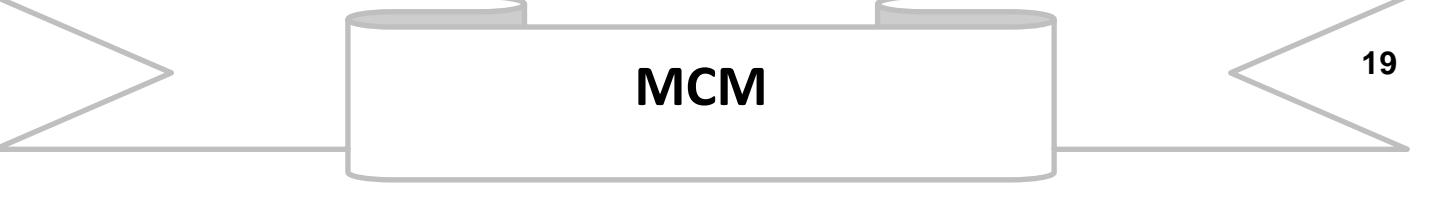
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## PART- III

### PHYSICS (50 MARKS)

#### 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 frequency of a sound wave moving with speed  $340 \text{ ms}^{-1}$  and wavelength  $0.5 \text{ m}$ ?   
A. 580 Hz    B. 660 Hz    C. 680 Hz    D. 560 Hz
- ii. A sound wave has a frequency of 2 kHz and wavelength is 35 cm. How long will it take to travel 1.5 km?   
A. 2.5 s    B. 2.2 s    C. 2.1 s    D. 2.3 s
- iii. A person 1.7 m tall is standing 2.5 m in front of a camera which uses convex lens, whose focal length is 0.05 m. What will be the image distance?   
A.  $q = 0.50 \text{ m}$     B. 0.0050 m    C. 0.05 m    D. 5.0 m
- iv. The electric potential at a point in an electric field is  $10^4 \text{ V}$ . 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. 10 J    B. 0.1 J    C. 1 J    D. 100 J
- v. Two capacitors of capacitances  $6 \mu\text{F}$  and  $12 \mu\text{F}$  are connected in series with 12 V battery. What will be the equivalent capacitance of the combination?   
A.  $4 \mu\text{F}$     B.  $6 \mu\text{F}$     C.  $8 \mu\text{F}$     D.  $10 \mu\text{F}$
- vi. By applying a potential difference of 10 V across a conductor, a current of 1.5 A passes through it. How much energy would be obtained from the current in two minutes?   
A. 2000 J    B. 1600 J    C. 1800 J    D. 1400 J
- vii. If a transformer is used to supply voltage to a 12 V model train which draws a current of 0.8A. Calculate the current in the primary if the voltage of the A.C source is 240 V.   
A. 0.06 A    B. 0.04 A    C. 0.05 A    D. 0.03 V
- viii. Ashes from a campfire deep in a cave show carbon-14 activity of only one-eighth the activity of fresh wood. How long ago was that campfire made?   
A. 18190 years    B. 17190 years    C. 19190 years    D. 16190 years
- ix. The activity of a sample of a radioactive bismuth decreases to one-eighth of its original activity in 15 days. Calculate the half-life of the sample.   
A. 10 Days    B. 20 Days    C. 5 Days    D. 12 Days
- x. When water waves enter the region of shallow their waves length\_\_\_\_\_.   
A. Decrease    B. Increase    C. Become zero    D. Remain same



