HOME PRACTICE TEST SERIES
Since 2012

SSC (Maharashtra Board) Test Series

English Medium

Semi-English Medium

HOME PRACTICE TEST SERIES
Since 2012

SCIENCE AND TECHNOLOGY PART – I
{ Chap : 1 + 2 }

Time : $1^{1/2}$ Hours **Total Marks : 30**

Note : 1.All questions are compulsory. 2.Draw scientifically, technically correct labeled diagrams wherever necessary.3.Start writing each main question on new page.4.Figures to the right indicate full marks .5.For each MCQ (i.e. Q.No.1-A) evaluation would be done for first attempt only.6.For each MCQ correct answer must be alphabet showing correct option. e.g. (I) (a) (II) (b) (III) (c)

1 (A).Choose the *correct* alternative : **[5]**

I. Weight is --------- quantity .
(A) vector (B) scalar (C) not vector nor scalar (D) universal constant

II. For the motion of an object thrown upwards, acceleration is ---------
(A) positive (B) negative (C) zero (D) infinite

III. If we jump 2 m on earth ; how much we can jump on Moon with same force ?
(A) 2 m (B) 12 m (C) 18 m (D) 1/3rd m

IV. The number of elements in the first three periods is determined by the electron capacity of the shells and the law of ----------
(A) valency (B) atomic size (C) electron octet (D) metallic character

V. Alkali metals have valency 1. This indicates that its position is at ----------
(A) group 1 (B) period 1 (C) group 2 (D) period 2

(B) Answer the following questions : **[5]**

I. Find odd man out :
Mass,Weight,Kinetic Energy,Gravitational Constant,Potential Energy.

II. K.E on surface of earth : ½ mv^2 : : K.E at infinite distance from earth : ----------

III. Which of the following element has largest atom.

$_{19}$K	$_{20}$Ca	$_{25}$Mn	$_{30}$Zn	$_{35}$Br

IV. Find out correlation among following elements : Li (6.9), Na(23) , K (39.1)

V. Match the following :

Column I	Column II
1. Bromine	(a) Scandium
2. Eka- boron	(b) Liquid halogen
	(c) Inert gas
	(d) Germanium

2 (A). Give *any one* Scientific Reason : **[2]**

I. Electronic configuration of the outermost shell is a characteristic of a particular group

II. The weight of a body is different on different planets.

(B) Attempt *any two* of the following questions : **[4]**

I. A solid metal ball of 5 kg is released from a height of 80 m and falls freely to the ground .Take g = 10 m/s^2 .What will be velocity of the ball on reaching the ground ?

II. What are the demerits of Mendeleev's periodic table.

III. Write down the electronic configurations of following elements :
$_3$Li , $_{11}$Na , $_7$N , $_{13}$Al

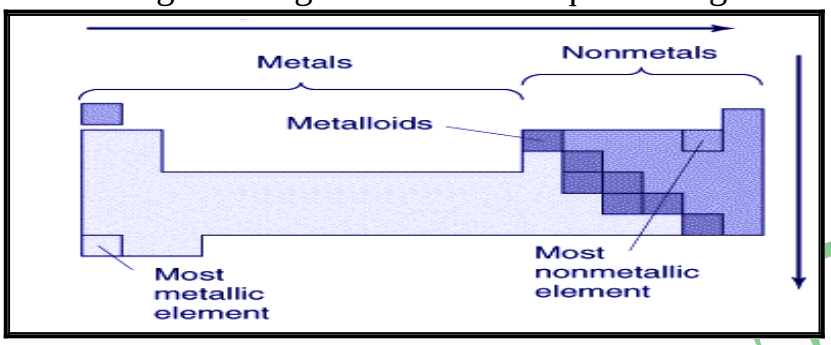
IV. Calculate the gravitational force due to the earth on a person of mass 80 kg ?
(Given : Mass of earth = 6 x 10^{24} kg ,Radius of earth = 6.4 x 10^6 m ,
G = 6.67 x 10^{-11} Nm^2/kg^2)

3. Attempt *any three* of the following questions : **[9]**

I. A ball is thrown up and reaches a height of 7. 2 m before coming down. What was its initial velocity ? How much total time will it take to come down ?
(Take g = 10 m/s^2)

II. Element having electronic configuration 2,8,8,1 .
Answer the following questions based on this configuration -
a) What is the atomic number of this element ?
b) To which the group does this element belong ?
c) To which period does this element belong ?
d) With which of the following elements would this element resemble ?
Al (13) , Na (11) , Li (3) , N (7)

III. Observe given diagram and answer questions given below :



Que : i) Which character increases with decreasing atomic radius along period?
ii) In which direction does metallic character increases along group I and II ?
iii) How many elements are neither metals nor non-metals ?

IV. Read the following para and answer the questions :
The earth exerts gravitational force on objects near it . According to Newton's second law of motion , a force acting on a body results in its acceleration. Thus , the gravitational force due to the earth on a body results in its acceleration. This is called acceleration due to the gravity and is denoted by 'g' .Acceleration is vector. As the gravitational force on any object due to the earth is directed towards the centre of the earth, the direction of the acceleration due to gravity is also directed towards the centre of the earth i.e vertically downwards.
Que : a) Define ' Earth's gravitational acceleration'.
b) What is the direction of 'g' ?
c) State the formula to calculate the value of 'g' ?

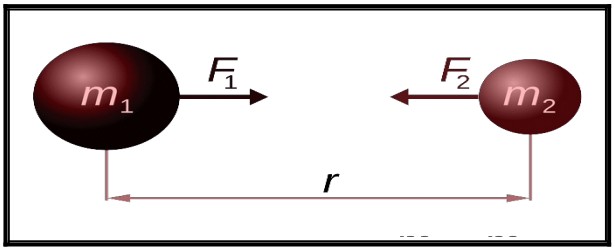
V. Complete the table :

G	$N\ m^2\ kg^2$	It is the gravitational force acting between two unit masses kept at a unit distance away from each other	----------
Mass	--------	----------	Same everywhere
Weight	--------	----------	----------

4. Answer any one of the following questions : **[5]**

I. Explain the difference between Mendeleev's Periodic table and Modern Periodic table.

II. Observe the diagram and answer the questions:



Que : a) Which force present between these two objects ? Define it ?

b) If the mass of second object doubled, the gravitational force of attraction between given two bodies will be ?

c) What change in the gravitational force of attraction between given two bodies you will see, if we double the distance between these bodies ?

d) The 'gravitational force of attraction' is a weaker force but it controls the Universe. State the reason.

e) If two Sumo Wrestlers are sitting at a distance of 3 m from each other. Their masses are 120 kg and 150 kg respectively. What will be the gravitational force between them ?

HOME PRACTICE TEST SERIES
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MATHS (PART – I)

{ Chap : 1 + 2 }

Time: $1^{1/2}$ Hours **Max. Marks: 30**

Note: 1. All questions are compulsory. 2. Use of calculator is not allowed.
3.Figures to the right of questions indicate full marks.

1.(A) Choose the correct alternative: **[3]**

I. For drawing graph of $4x + 3y = 13$, if $x = -2$. What is the value of y ?
a) 3 b) -3 c) 4/3 d) 7

II. What is the value of $\begin{vmatrix} 3 & 2 \\ 5 & 7 \end{vmatrix}$ a) 3 b) -2 c) -5 d) 11

III. What will be the value of discriminant for equation $y^2 + 9y - 5 = 0$
a) 200 b) - 20 c) -54 d) 101

(B) Solve the following questions (Any Three) : **[3]**

I. If D = 14 , Dx = -14 , Dy = - 28. Then what will be the value of y ?

II. Obtain a quadratic equation if roots are -2 and -3 .

III. Find value of determinant .

$$A = \begin{vmatrix} 3\sqrt{2} & 7 \\ 2 & 2\sqrt{2} \end{vmatrix}$$

IV. Find $\alpha + \beta$ and $\alpha \times \beta$, if α & β are roots of a quadratic equation $2x^2 + 4x - 7 = 0$

2.(A) Complete the following activities (*Any One*): [2]

I Find the value of following determinant :

Activity :

$$A = \begin{vmatrix} 5/2 & 2/4 \\ 3/4 & 1/4 \end{vmatrix} = (\square \times 1/4) - (\square \times 3/4)$$

$$= 5/8 - \square = \frac{10 - 6}{\square}$$

Hence value of determinant is $\square$

II. Find quadratic equation with help of given information and complete the table.

Sum of the roots	**3**	**- 5**
Product of the roots	**- 9**	**7**
Quadratic Equation		

(B) Solve the following questions (*Any Three*) : [6]

I. Solve the quadratic equation by factorization method : $m^2 - 15m + 14 = 0$

II. Obtain a quadratic equation if roots are $1 - 2\sqrt{3}$ and $1 + 2\sqrt{3}$.

III. Solve using formula : $x^2 - 3x - 4 = 0$

IV. The perimeter of a rectangle is 34 cm .The length of the rectangle is more than triple its breadth by 1. Then Find length and breadth by determinant method.

V. If $y = 2$ is a root of equation $ky^2 - 12y - 8 = 0$ .Then find the value of k ?

3 (A). Complete the following activity (Any One) : [3]

I. Determine nature of roots of the quadratic equation by using formula .

$m^2 + 3m - 12 = 0$

Activity : Compare with $ax^2 + \square + c = 0$

We get , a = 1 , b = ☐ , c = - 12

b^2 — ☐ = 3^2 — 4 x ☐ x (-12)

D = 9 — ☐

D = 57

Hence b^2 — 4 ☐ > 0

Hence roots of the equation are ☐ and unequal

II. x + y = 4 ; 5x – 3y = 12

Activity : x + y = 4 …….. I and 5x – 3y = 12 …… II

Let's solve the equations by eliminating y.

By multiplying equation I by 3, we get

3x + ☐ = 12 ……. III

Let's add eq . III & II

3x + ☐ = 12 ……. III

\+

5x – 3y = 12 ……. II

☐ = 24 Hence x = ☐

Substituting x = ☐ in eq . I , we get

☐ + y = 4 Hence y = ☐

(B) Solve the following questions (Any Two) : **[6]**

I. Solve equations by drawing graphs of x + y = 7 and 3x – y = 1 .

II. If the airplane travels with 720 km of uniform speed. If speed is increased by 8 km/hr, it takes 60 min less to cover the same distance . Find the initial speed of the plane.

III. A shopkeeper sold item A and item B as follows. Find Selling prices of both items A and B.

Monthly Sale	Item A	Item B	Total Sale
August	10 pieces	5 pieces	Rs.4000/-
September	24 pieces	1 piece	Rs. 7400/-

IV. $\frac{2}{5}x + y = \frac{11}{5}$; $x + \frac{2}{3}y = \frac{11}{3}$

V. Solve by Completing Square Method : $x^2 + x - 20 = 0$

4.Solve the following questions (*Any One*) : [4]

I. A boat travels 12 km upstream and 20 km downstream in 4 hours . Same boat travels 28 km upstream and 40 km downstream in 9 hours .What is the speed of boat in still water and speed of water current ?

II. A three digit number is equal to 22 times the sum of its digits .If the digits are reversed the new number is 99 more than the old number .The middle digit is equal to the sum of extreme digits. Find the original number .

III. There are 120 students standing in a ground .The number of students in each row is 7 more than that in each column. Find the number of students standing in each row and column .

5. Solve the following questions (*Any One*) : [3]

I. Solve following simultaneous equations by graphical method.

$x + y = 0$; $3x - y = 8$

II. If α and β are the roots of the quadratic equation $m^2 - 3m - 5 = 0$. Find values of $\alpha^2 + \beta^2$ and $\alpha^3 + \beta^3$

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HISTORY AND POLITICAL SCIENCE
{ Chap - 1 + 2 + Working of the constitution }

Time : 1 1/2 Hours **Total Marks : 30**

Note : 1.All the activities/questions are compulsory.2.Figures to the right indicates full marks.3.Activities/Que No.1 to 5 are based on History and Activities/Que No. 6 to 9 are based on Political Science.4.It is mandatory to write a complete statement as answer in Question No. 1(A) and Question No.6. 5.In Question No. 2(A) and 8(B) the appropriate answer is expected to be written by pen only in the concept map.6.In Question No.1(B) students are expected to only *identify* the *wrong* pair.

1(A).Choose the correct option from the given options and complete the statements: **[3]**

I. Articles by Leopold von Ranké is published in ----------
(A) Das Capital (B) Reason in History
(C) The Histories (D) The Theory and Practice of History

II. ---------- felt that explaining the transition in history is more important.
(A) Karl Marx (B) Michel Foucault (C) René Descartes (D) Voltaire

III. Book "Stripurush Tulana" was written by ----------
(A) Mahatma Phule (B) Damodar Kosambi
(C) Tarabai Shinde (D) Meera Kosambi

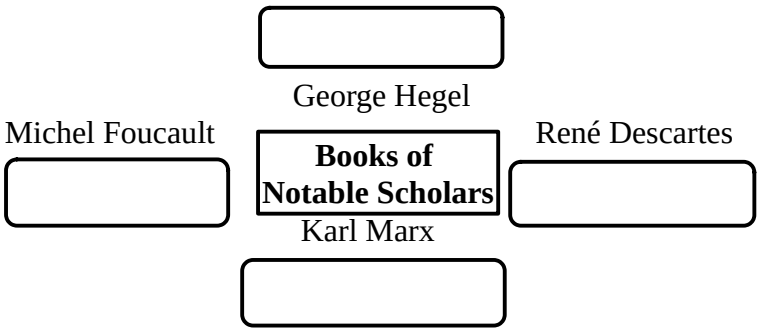
(B) Identify the wrong pair and write : **[2]**

Set I : 1) Karl Marx – Human history is the history of class struggle.
2) Voltaire – Analysis through Dialectics is important
3) Leopold von Ranké – Criticised imaginative narration of history
4) Simon de Beauvoir – Established fundamentals of feminism

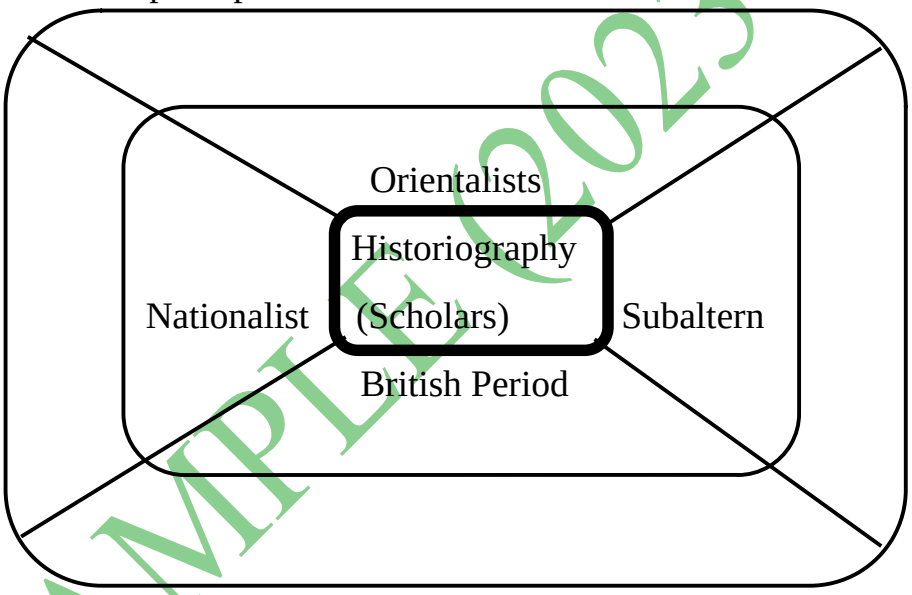
Set II : 1) Harshacharit – Banabhatta 2) Tuzuk - i - babari – Babur
3) Rajtarangini – Kalhana 4) Tarikh-i-Phiruz Shahi – Alberuni

2(A). Do as directed : (*Any One*) **[2]**

I. Complete the concept map :



II. Complete the concept map :



(B) Write Short Notes : (*Any Two*) **[4]**

I. Bakhar II. Class Struggle III. The Archaeology of Knowledge

3. Explain the following statements with reasons : (*Any One*) **[2]**

I. Inscriptions are important historical documents.

II. According to Hegel " grasping the meaning of any event happens in terms of two direct opposites".

4. Read the following passage and answer the questions given below: [4]

René Descartes was the foremost among scholars who insisted on verifying the reliability of historical documents by critically examining them. Among the rules given by him in his book, the following is supposed to have a great impact on the scientific method of research : Never to accept anything foe true till all grounds of doubt are excluded.

Voltaire's original name was Francois-Marie Arouet. He was French. He opined that along with objective truth and chronology of historical events considering social traditions,trade,economy,agriculture,etc. was also equally important in historiography. It gave rise to the thought that understanding all aspects of human life is important for history writing.

Que : I. Which basic rule put forth by René Descartes in historiography ? 1

II. What is Voltaire's original name ? 1

III. How did Voltaire expand scope of historiography ? 2

5. Answer the following questions in detail : (*Any One*) [3]

I. Explain the nature of orientalist historiography.

II. Explain the distinct work of Simone de Beauvoir in historiography.

6.Choose the correct option from the given options and complete the sentences: [2]

I. The 73rd and 74th amendment is about ----------
(A) 33% women reservation (B) Federal structure
(C) SC-ST Act (D) RTI

II. Constitution came into force on ----------
(A) 26th January 1950 (B) 15th August 1950
(C) 16th August 1947 (D) 15th August 1947

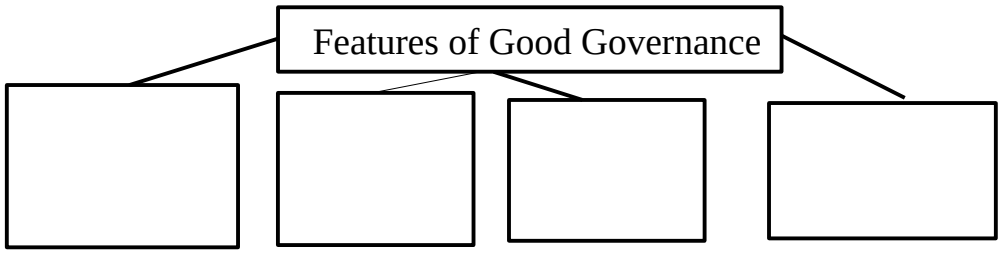
7. State whether the following statements are true or false with reason (*Any One*): [2]

I. Indian democracy become successful to a great extent.

II. Citizen empowerment is the essential condition of democracy.

8.(A) Complete following activity **[2]**

● Complete the concept map



(B) Explain the concept **[2]**

I. Social justice and equality

9. Answer in brief (*Any One*) : **[2]**

I. What is Political Maturity

II. Explain the role of judiciary in strengthening the democracy.

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भूगोल

घट्क चाचणी १

(घट्क १ +२)

वेळ: ६० मि. **गुण : ३०**

Note: 1.All questions/activities are compulsory. 2.Figures to the right indicate full marks. 3.For Q. No. 4(A) use supplied outline map of Brazil and tie it to your answer-book.4.For Q. No. 6(A) use the graph paper (if needed) supplied to you and attach it to the main answer-book.5.Use of stencil is allowed for drawing map.6.Draw neat diagrams and sketches wherever necessary.7.Answers should be written in Black and Blue ink only.8.Use of pencil/colour pencil is allowed for diagrams, sketches and map work.9.Answers written in pencils will not be considered.

प्र १ . पुढील विधाने पूर्ण करून पुन्हा लिहा **(४)**

१) बा्झिल ---------- गोलार्धात आहे.

अ) उत्तर **ब) दक्षिण** **क) उत्तर आणि दक्षिण** **ड) मुख्यत्वे उत्तर**

२) महाराष्ट्रात , सिंचनाखालील भागात ---------- मुख्य पीक घेतले जाते

अ) भात **ब) मूग** **क) उडीद** **ड) ऊस**

३) ग्रामीण भागातील वस्त्यांचा आकृतिबंध ---------- प्रकारचा आहे

अ) रेषाकृती **ब) केंद्रीय** **क) विखुरलेल्या** **ड) विरळ**

२. पुढील जोड्या जुळवा : **(३)**

१) बालाघाट रांगा	**अ) लोकसंख्येची घनता कमी**
२) शहरी भाग	**ब) सह्याद्रीच्या पूर्व रांगा**
३) उजनी धरण	**क) उल्हास नदी**
४) ग्रामीण भाग	**ड) दाट लोकवस्ती**
	इ) भिमा नदी
	ई) सह्याद्रीच्या पश्चिम रांगा

३ अ) पुढील विधाने चूक कि बरोबर ते सांगा. (४)

१) सागरी किनाऱ्याच्या भागात प्रामुख्याने प्राथमिक व्यवसाय केले जातात.

२) सागरी किनाऱ्यांपासून थोडे दूर वाड्या-वस्त्यामध्ये पर्यटन हाच मुख्य व्यवसाय झाला आहे.

३) उजनी धरणाचा मुख्य उपयोग वीज निर्मितीसाठी होतो.

४) क्षेत्र भेटीसाठी पूर्वतयारीची गरज नसते.

ब) पुढील उत्तरे एका वाक्यात लिहा . (४)

१. बाझिल मध्ये कोणत्या प्र् कारचे सरकार आहे ?

२. भारतात कोणत्या प्रकारचे सरकार आहे ?

३. भारत कोणत्या गोलार्धात आहे ?

४. भारताचे अति दक्षिणेकडील टोक कोणते

४.पुढील नकाशा वाचून त्याखालील प्र् श्न सोडवा (फक्त चार) (४)

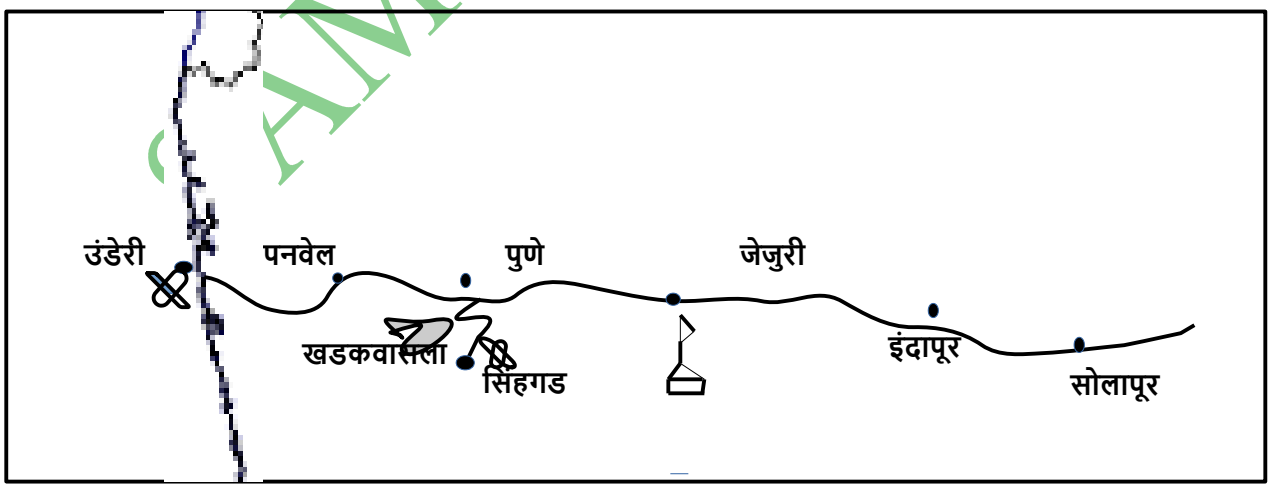
१ .कोणता मार्ग या नकाशात दाखविला आहे ?

२. कोणते किल्ले या नकाशात दाखविले आहेत ?

३. नकाशातील धरण कोणत्या शहराजवळ आहे ?

४. कोणता सागरी किल्ला येथे दाखविला आहे ?

५. कोणते धार्मिक स्थळ दाखविले आहे ?



५. कारणे द्या (फक्त एक) **(३)**

१ . भारत हा तरुण देश आहे.

२. धरणे व जलाशय आवश्यक आहेत .

६. थोडक्यात उत्तरे लिहा. (कोणतेही दोन) **(८)**

१.क्षेत्र भेटीचे महत्व विशद करा .

२. भारत व बाझिलच्या ऐतिहासिक पार्श्वभूमीची तुलना करा.

३.भारत व बाझिलच्या स्थान व विस्तार याची तुलना करा.

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अक्षरभारती
{ घटक २(अ)(आ) }

वेळ : १ १/२ तास **एकूण गुण : ४०**

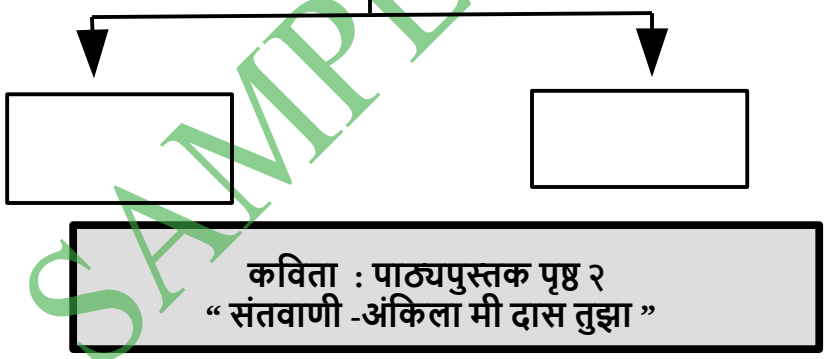
कृती सूचना :१) सूचनेनुसार आकलनकृती व व्याकरणामधील आकृत्या काढाव्यात.२) आकृत्या पेननेच काढाव्यात ३) उपयोजित लेखनातील कृतींसाठी (सूचना,निवेदन)आकृतीची आवश्यकता नाही.तसेच या कृती लिहून घेऊ नयेत ४) विभाग-५ उपयोजित लेखन प्र.५(अ)(२) सारांशलेखन या घटकासाठी गद्यविभागातील प्र.१ (इ) अपठित उतारा वाचून त्या उताऱ्याचा सारांश लिहावयाचा आहे.५) स्वच्छता , नीटनेटकेपणा व लेखननियमानुसार लेखन याकडे लक्ष द्यावे .

विभाग - १ : पद्य

प्र. १. (अ) कवितेच्या आधारे दिलेल्या सूचनांनुसार कृती करा :

१. आकृती पूर्ण करा. **[२]**

संत नामदेवांनी पाहिले विठ्ठलाला या रूपात



कविता : पाठ्यपुस्तक पृष्ठ २
" संतवाणी -अंकिला मी दास तुझा "

२. कृती पूर्ण करा

I) एका वाक्यात लिहा : पक्षिणी केंव्हा झेपावते - ---------- **[१]**

II) चौकटी पूर्ण करा (फक्त एक) **[१]**

i) हरिणीचे पिल्लू - ☐ ii) विनवितो चातक ज्यास - ☐

३.कवितेतील पुढील शब्दांचा अर्थ लिहा :

१. दास = ------ २. अंकिला = ------- ३. कनवाळू = -------- ४. धेनु = -------- **[२]**

४. 'वणवा लागलासे वनी । पाडस चिंतीत हरणी ।।' **या ओळींचे विचारसौंदर्य स्पष्ट करा .** **[२]**

आ) कवितेच्या आधारे दिलेल्या सूचनांनुसार कृती करा :

१. पुढील कृती पूर्ण करा. **[२]**

I) चौकटी पूर्ण करा .

i) पाणी सुख देते - ☐ ii) चकोर पित असे - ☐

कविता २ : पाठ्यपुस्तक पृष्ठ ४
संतवाणी : योगी सर्वकाळ सुखदाता

२. आकृती पूर्ण करा. **[२]**

योगीपुरुषाची वैशिष्ट्ये

---------- ----------

३.कवितेतील पुढील शब्दांचा अर्थ लिहा : **[२]**

१. योगी = ------ २. सुखदाता = ------- ३.तृषितें = -------- ४. रसना = --------

४.' उदकाचे सुख ते किती । सवेंचि क्षणे तृषिते होती ।
योगिया दे स्वानंद तृप्ती । सुखाशी विकृती पै नाही ।। ' **या ओळीतील भावसौंदर्य स्पष्ट करा** **[२]**

(इ) खालील मुद्द्यांच्या आधारे कोणत्याही एका कवितेसंबंधी खालील कृती सोडवा :

		संतवाणी - " अंकिला मी दास तुझा " किंवा **" संतवाणी : योगी सर्वकाळ सुखदाता "**
१ .	कवितेचे कवी	[१]
२ .	कवितेचा विषय	[१]
३ .	कवितेतील कोणत्याही दोन ओळींचा सरळ अर्थ लिहा	[२]
४ .	कविता आवडण्या वा न आवडण्यामागची कारणे	[२]
५ .	कवितेतील पुढील शब्दांचा अर्थ लिहा	काज - धरणी - मेघ - विनविणे - किंवा उदक - तृप्ती - विकृती - सर्वकाळ - [२]

विभाग - २ : भाषाभ्यास

प्र २ (अ) व्याकरण घटकावर आधारीत कृती :

१. वाक्प्र् चार : पुढील वाक्प्र् चारांचा अर्थ लिहून वाक्यात उपयोग करा : i) उद्धार करणे **[२]**

(आ) भाषिक घटकांवर आधारित कृती :

१. शब्दसंपत्ती :

I) पुढील शब्द समूहासाठी एक शब्द लिहा : (फक्त एक) [१]

i) देवाला मानणारा → ☐ ii) विशेष प्रसंगी प्रकाशित होणारे → ☐

II) पुढील शब्दांसाठी समानार्थी शब्द लिहा : [१]

i) गाय = ii) पाणी =

III) विरुद्धार्थी शब्द लिहा : [१]

i) दास x ii) मृदू x

IV) वचन बदला [१]

i) सुख - ii) दाता -

२. लेखननियम :
पुढील शब्द शुद्ध करून लिहा : [२]
i) पक्षीन ii) धरणि iii) अग्रिमाझी iv) चिंतित

३. विरामचिन्हे : [१]
I) विरामचिन्हे लिहा :
I) उद्गारवाचक चिन्ह ii) दुहेरी अवतरण

II) विरामचिन्हे ओळखा : [१]

i) - → ☐ **ii)** ; → ☐

विभाग - ३ : उपयोजित लेखन

प्र.५ (अ) पुढीलपैकी एक कृती सोडवा : **[६]**

१.प्र.ज – लेखन : पुढील निवेदन वाचा व त्याखालील कृती सोडवा :

शाळेत व गावात स्वच्छता सप्ताह राबविणे
दि.२ ऑक्टोबर ते ९ ऑक्टोबर

शाळेचा विद्यार्थी प्रतिनिधी या नात्याने

किंवा

सहभागी विद्यार्थ्यांचे अभिनंदन करणारे पत्र लिहा

स्वच्छता सप्ताहाच्या तयारीसाठी वर्गप्रतिनिधींची बैठक बोलावण्यासाठी त्यांना पत्र लिहा

HOME PRACTICE TEST SERIES
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हिंदी लोकभारती
{ घटक १ + २ }

समय : १ १/२ घंटा **अंक : ४०**

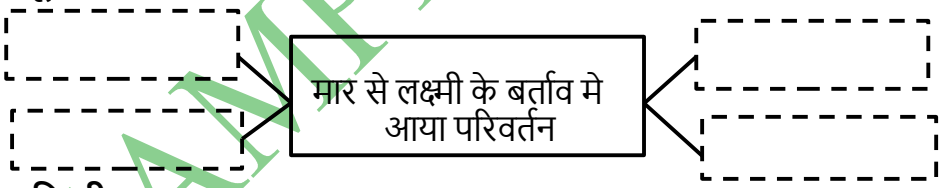
सूचनाए : (१) सूचना के अनुसार गद्य , पद्य ,पूरक पठन तथा भाषा अध्ययन की आकलन कृतियो में आवश्यकतानुसार आकृतियों में ही उत्तर लिखना अपेक्षित है ।(२)सभी आकृतियों के लिए पेन का ही उपयोग करे ।(३)रचना विभाग में आकृतियों की आवश्यकता नहीं ।(४)शुद्ध , स्पष्ट एवं स्वच्छ लेखन अपेक्षित है ।

विभाग -१ : गद्य

प्र .१ (अ) . पठित परिच्छेद पढकर दी गई सूचनाओ के अनुसार कृती किजिए : **(०८)**

परिच्छेद : पाठ्यपुस्तक पृष्ठ ३
'उस दिन _____ घर लौटते'

(१) संजाल पूर्ण किजिए : २



(२) कारण लिखीए : २

(१) लक्ष्मी के शरीर मे एक सिहरन सी दौड गई -

(२) रमजानी ने रोगन दिया –

(3) (१) निम्नलिखित शब्दो मे से प्र त्यय छाटकर लिखीए : १
i) कबूलता ---------- ii) निशानी ----------

(२) विरुद्धार्थी शब्द लिखीए : १
i) मूर्ख x -------- ii) धीरे x ----------

(४) 'पालतु जानवरो के साथ सौहार्दपूर्ण व्यवहार करना चाहिये' **इस पर अपने विचार लिखीए** । २

अपठित गद्यांश

(आ) निम्नलिखित गद्यांश को पढ़कर निचे दिए गए प्रश्नो के उत्तर दीजिए। **(४)**

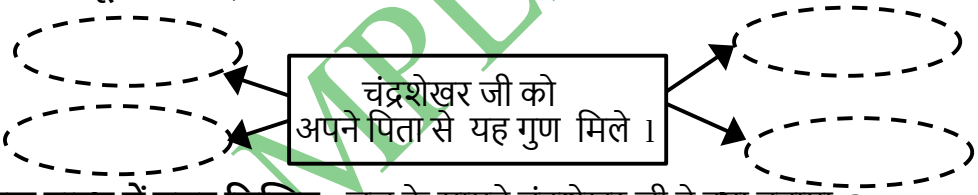
भारतीय स्वतंत्रता संग्राम के महानायक एवं लोकप्रिय स्वतंत्रता सेनानी चंद्रशेखर आजाद का जन्म 23 जुलाई, 1906 को मध्यप्रदेश के झाबुआ जिले के भाबरा नामक स्थान पर हुआ। उनके पिता का नाम पंडित सीताराम तिवारी एवं माता का नाम जगदानी देवी था। उनके पिता ईमानदार, स्वाभिमानी, साहसी और वचन के पक्के थे। यही गुण चंद्रशेखर को अपने पिता से विरासत में मिले थे।चंद्रशेखर आजाद 14 वर्ष की आयु में बनारस गए और वहां एक संस्कृत पाठशाला में पढ़ाई की। वहां उन्होंने कानून भंग आंदोलन में योगदान दिया था। 1920-21 के वर्षों में वे गांधीजी के असहयोग आंदोलन से जुड़े। वे गिरफ्तार हुए और जज के समक्ष प्रस्तुत किए गए। जहां उन्होंने अपना नाम 'आजाद', पिता का नाम 'स्वतंत्रता' और 'जेल' को उनका निवास बताया।उन्हें 15 कोड़ों की सजा दी गई। हर कोड़े के वार के साथ उन्होंने, 'वन्दे मातरम्' और 'महात्मा गांधी की जय' का स्वर बुलंद किया। इसके बाद वे सार्वजनिक रूप से आजाद कहलाए। क्रांतिकारी चंद्रशेखर आजाद का जन्मस्थान भाबरा अब 'आजादनगर' के रूप में जाना जाता है।

जब क्रांतिकारी आंदोलन उग्र हुआ, तब आजाद उस तरफ खिंचे और 'हिन्दुस्तान सोशलिस्ट आर्मी' से जुड़े। रामप्रसाद बिस्मिल के नेतृत्व में आजाद ने काकोरी षड्यंत्र (1925) में सक्रिय भाग लिया और पुलिस की आंखों में धूल झोंककर फरार हो गए।

17 दिसंबर, 1928 को चंद्रशेखर आजाद, भगत सिंह और राजगुरु ने शाम के समय लाहौर में पुलिस अधीक्षक के दफ्तर को घेर लिया और ज्यों ही जे.पी. साण्डर्स अपने अंगरक्षक के साथ मोटर साइकिल पर बैठकर निकले तो राजगुरु ने पहली गोली दाग दी, जो साण्डर्स के माथे पर लग गई वह मोटरसाइकिल से नीचे गिर पड़ा। फिर भगत सिंह ने आगे बढ़कर 4-6 गोलियां दाग कर उसे बिल्कुल ठंडा कर दिया। जब साण्डर्स के अंगरक्षक ने उनका पीछा किया, तो चंद्रशेखर आजाद ने अपनी गोली से उसे भी समाप्त कर दिया।

(१) संजाल पूर्ण कीजिए : १

i)



ii) एक वाक्य में उत्तर लिखिए : जज के सामने चंद्रशेखर जी ने क्या बताया ? १

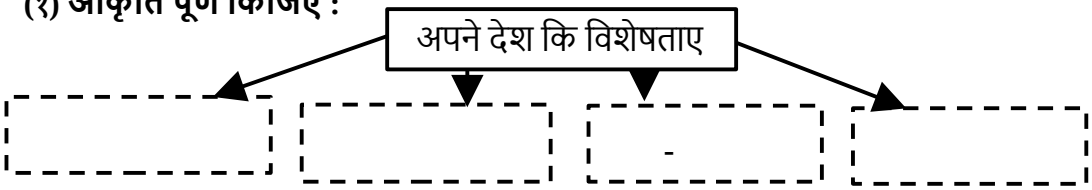
(२) 'चंद्रशेखर जी का स्वंत्रता संग्राम में योगदान' **अपने शब्दों में लिखिए।** २

विभाग - २ : पद्य

प्र .२ (अ). पठित पद्यांश पढकर सूचना के अनुसार कृती किजीए : **(६)**

पद्यांश : पाठ्यपुस्तक पृष्ठ १
'हिमालय _____ हम आये थे नही |....

(१) आकृति पूर्ण किजिए : २



(२) आकृति पूर्ण किजीये : २

i) उषा ने पहनाया - ☐

ii) धरा पे इसकी धूम रही - ☐

iii) हमने 'गोरी' को दिया - ☐

iv) सप्तसिंधू मे उठे - ☐

(३) इस पद्यांश की किन्ही दो पंक्तियों का **भावार्थ** लिखिए २

विभाग - ३ : भाषा अध्ययन

प्र .३ (अ). सूचना के अनुसार कृतियाँ कीजिए। (१२)

(१) अधोरेखांकित शब्दों के भेद पहचान कर लिखिए। २

i) हिमालय के आँगन मे l

ii) प्र कृती का रहा पालन यही

(२) निम्नलिखित अव्यवों का वाक्य मे प्र योग किजिए। २

i) और ii) ओह

(३) मुहावरे का अर्थ लिखकर अपने वाक्य में प्र योग कीजिये। २

i) मुह मारना l - अर्थ : ---------- वाक्य : ----------

ii) निछावर करना l - अर्थ : ---------- वाक्य : ----------

(४) निम्नलिखित वाक्य में यथास्थान उचित विरामचिन्हों का प्रयोग करके वाक्य फिरसे लिखिए : २

i) तो उसकी सजा इसे लाठीयो से दी गई l ii) ओह कंबख्त ने कीर्तनी बेदर्दी से पिटा है l

(५) निम्नलिखित वाक्यों को शुद्ध करके फिरसे लिखिए : २

i) हिमालय के अंगण मे उसे, किरनो का दे उपहार ii) करामत अली इधर दो चार दिनो से अस्वस्थ था

(६) निम्नलिखित वाकया मेसे सहायक क्रिया को पहचानकर उसका मूल रूप लिखिए। १

(i) लक्ष्मी ने घास छोड़ दिया l

सहायक क्रिया	मूल रूप

(७) निम्नलिखित क्रिया का प्रथम तथा द्वितीय प्रेरणार्थक रूप लिखिए। १

क्रिया	**प्रथम प्रेरणार्थक**	**द्वितीय प्रेरणार्थक**
रोना		

विभाग - ४ : उपयोजित लेखन

प्र . ४(अ) (१) पत्र लेखन : **(०५)**

निम्नलिखित जानकारी पर आधारित पत्र लेखन किजिए :

अनघा /अनूप सानप , अपने दिल्लीवाले चचेरे भाई को अपने करिअर के बारे में पत्र लिखता/लिखती है।

(आ) विज्ञापन लेखन : **(०५)**

पुस्तक मेला	विशेषताएँ
छूट	दिन एवं स्थान

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Unit Test 1

Time : 1 ½ hrs] **(Chap 1.1 +1.2)** **[Max. Marks : 40**

SECTION I : LANGUAGE STUDY

Q.1.(A) Do as directed : (Attempt any four) **(8 Marks)**

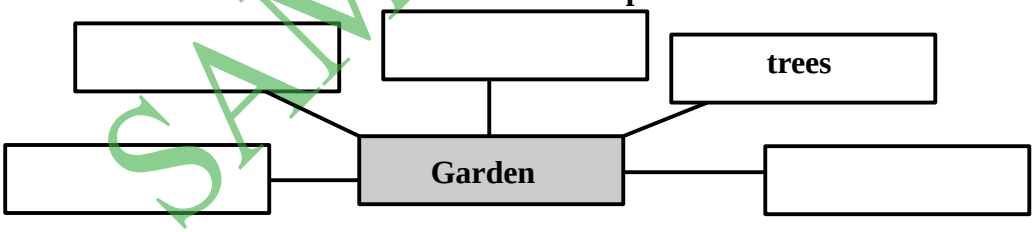
(1) Complete the words by using correct letters : **(2)**
(1) dist _ ess **(2) tee _ age**
(3) wh _ le **(4) mer _ y**

(2) Put the following words in alphabetical order : **(2)**
(1) new , road , dear , way **(2) stout, assault, manifold, hearty**

(3) Punctuate the following : **(2)**
(1) help lord to just say no **(2) please open up my eyes dear lord**

(4) Make three words (minimum 3 letters each) using the letters in the given word - 'intermittent' **(2)**

(5) Write the related words as shown in the example. **(2)**



(6) Complete the word chain of 'nouns'.Add four words, each beginning with the last letter of the previous word: Monkey → y --------- → ---------- → --------- → ----------. **(2)**

(B) Do as directed : **(2 Marks)**
(1) (Attempt any one)
(a) Make a meaningful sentence by using the following phrase in your own sentence.
' to take notice of ' **(1)**

OR

(b) Add a clause to the following sentence to expand it meaningfully: The silence was ------ (1)

(2) (Attempt any one)

(a) Add a prefix or suffix to make new words : (1) fold (2) clear (1)

OR

(b) Make a meaningful sentence using any one of the following words : (1)

(1) pray (2) adjacent

SECTION II : TEXTUAL PASSAGE

Q2.(A) Read the following passage carefully and complete the activities : (10 Marks)

A1. Complete the following : (2)

(1) A small incident on ----------

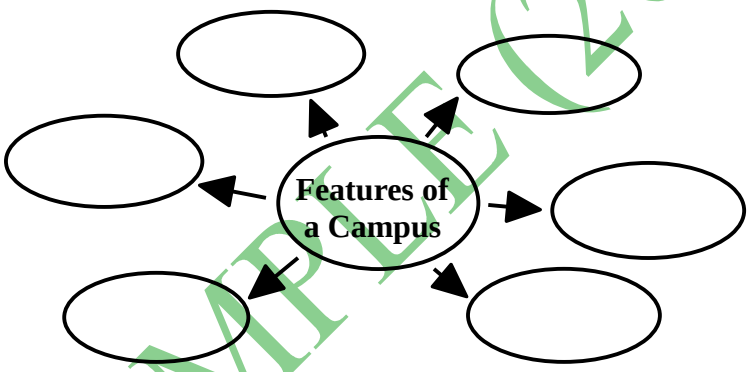
(2) Published specially of children ----------

(3) The quiet afternoon presented the perfect backdrop for ----------

(4) The intermittent chirping of ----------

Passage : As given on textbook page no. 8 from ‘ My father ……..in the book.’

A2. Complete the following web : (2)



A3. Find out opposite words for the following from the passage. (2)

(1) short x (2) tiny x (3) older x (4) soft x

A4. Rewrite the sentences as per instructions given along with. (2)

(1) Our house was in a corner of the campus. (Rewrite in the Present Tense)

(2) I became deeply absorbed in the book. (Rewrite in the Simple Future Tense)

A5. Write your thoughts on “hobby of reading” (2)

SECTION III : POETRY

Q 2. (A) Read the following stanzas do the activities : (5 Marks)

A1. Complete the following : (2)

(1) According to the poet, each day brings ----------

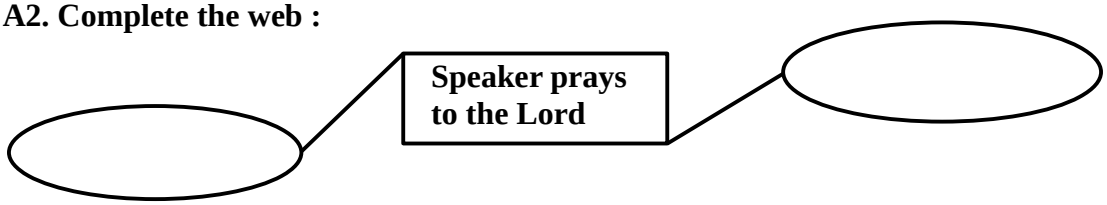
(2) The poet can choose ----------

(3) Poet want to stand for ----------

(4) The darkened road leads to ----------

Extract : As given on textbook page no. 3 from ‘ Each day ……..in me.’

A2. Complete the web : **(2)**



A3. Pick out and write two pairs of rhyming words from the extract. **(1)**

(B) Read the following poem and write an appreciation of it with the help of given points
(5 Marks)

Poem : As given on textbook page no. 3 - ‘A Teenager’s Prayer’

Points :
(1) Title : **(½)**
(2) Name of the Poet : **(½)**
(3) Rhyme Scheme : **(1)**
(4) Figure of speech : (Any One) **(1)**
(5) Theme/Central idea : (In two/three lines) **(2)**

SECTION IV : WRITING SKILLS

Q 3. Attempt Any One of the following
(A) Letter Writing : **(5 Marks)**

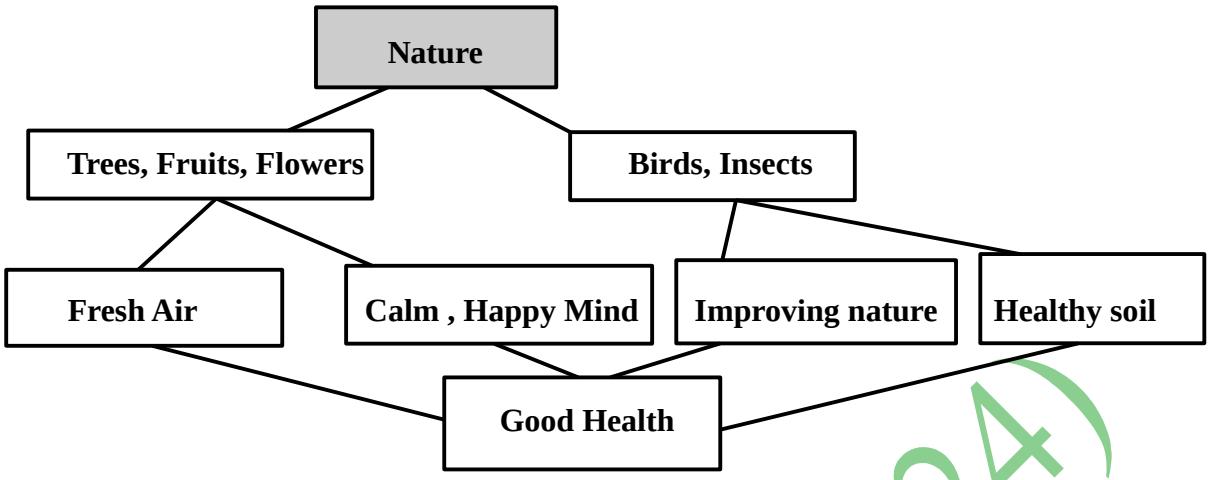
Sky Observation Activity
An interesting activity is arranged on the occasion of geography day ‘Sky Observation’
Timing : Timing will be 8 pm to 11 pm on 12th Oct 2019
Venue : Geography department , Happy Day School, Pune
Necessary instruments will be arranged from geography department
Registration required.

A1. Informal Letter ;
Read handout given above and write a letter to your friend to request him/her to participate in ‘Sky Observation’ activity.
You may add your own points.

OR

(B) Information Transfer : **(5 Marks)**

Write a paragraph on 'Importance of Nature' with the help of following web.



SECTION V: SKILL DEVELOPMENT

Q 4. Translation : **(5 Marks)**

(a) Translate the following words into your medium of instruction .(Any Four) **(2)**

(1) Distress (2) Stout (3) Way (4) Lord

(5) Dominant (6) Professional

(b)Translate the following sentences in your medium of instruction.(Any Two) **(2)**

(1) The silence was occasionally broken by the sound of my family snoring.

(2) I must take a decision now.

(3) What will be your stand on this ?

(4) They are not obedient students.

(c) Translate the following idoms/proverb into your medium of instruction(Any One) **(1)**

(1) A friend in need is a friend indeed.

(2) Health is wealth.

HOME PRACTICE TEST SERIES
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ENGLISH KUMARBHARATI
{ Chap : 1.1 + 1.2 }

Time : 2 hrs **Total Marks : 40**

Section - I
(Language Study)

Q1. A1 . Do as directed (Any Four) : **[4 marks]**

1. Punctuate the following : I asked Can you feed me

2. Find hidden words from given word : temptation

3. Make meaningful sentence by using given phrase : ‘ in a flash ’

4. Spot error and rewrite the correct sentence : I was came from city now.

5. Identify the type of sentence : “ Can you drive heavy vehicle?”

6. Complete the word chain : cover ⟶ **r--------,--------,--------,--------**

A2 . Do as directed (Any Two) **[4 marks]**

1. Make sentences of your own to show the difference of word and its homophone : ‘ know ’

2. **Conversion of Tense :**
Our house was in a corner of the campus. **(Rewrite in the Present Tense)**

3. **Make a word register of four words related to :** School

A3 . Do as directed (Any One) **[2marks]**

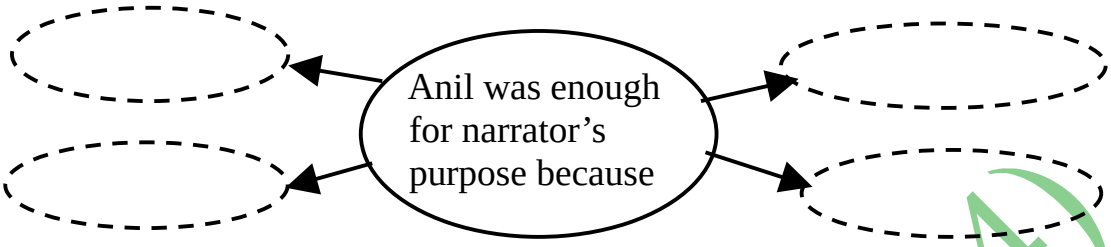
1. Pick out modal auxillary verb and state its function : You must tell the truth

2. Analyse the sentence :
Anil was watching a wrestling match when I approached him.

Section - II
Textual Passage
(Reading Skill,Vocabulary and Grammar)

Q2.A Read the following passage and complete the activities : [10 marks]

A1. Complete the web : 2



<u>Passage</u> : As given on textbook page no. 8 from 'I was ……..my man.'

A2. Complete the following : 2

I) Narrator thought that , this helps in making friends ----------
II) Narrator took a new name ----------
III) Wrestlers were doing these things ----------
IV) Narrator thought that he misjudged Anil because ----------

A3. Find out describing words from the extract which are used for the given nouns. 2

I) -------- successful II) --------- flattery
III) --------- wrestlers IV) ----------smile

A4. Do as directed : 2

Rewrite the sentences in indirect or reported speech :

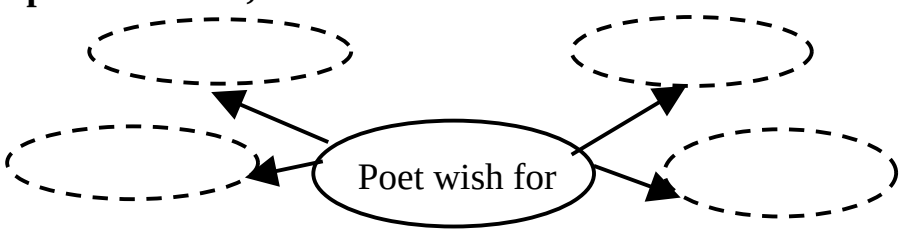
I) " I want to work for you," I said
II) I said modestly , " I do wrestle a bit."

A5. Why did narrator try to get into the Anil 's confidence ? **write in your words. 2**

Section - III
(Poetry)

Q 3. A . Read the following extract carefully and complete the activities given below. [5marks]

A1. Complete the web ; 2



Extract : As given on textbook page no. 3 from ‘ Where……..its way.’

A2. Find example of metaphor from the extract. **1**

A3. Find example of Personification from the extract. **1**

A4. Pick out a line from the extract that contain “Alliteration**”** **1**

Section – IV

(Reading skill, Vocabulary and Grammar)

Q.4.A. Read following passage and do the given activities **[10 marks]**

A1. Regular sport activity helps in improving : **2**

The nation always needs its heroes to have someone to be a guiding star for a young generation. Numerous sports personalities with their efforts and hard work show that everything is possible in this world. Also, they demonstrate the great effects of constant sports activities and team sports participation. These people give us a strong motivation to go in for sports and become better every day. Well-known athletes encourage the youth in the country and outlines for them every great advantage of sports.

As you can see, sports importance for people in the country is really impressive and impeccable. Sports provide a bunch of advantages and improve people’s lives significantly. With regular sports activity, it is easy to keep a good shape, improve physical stamina and brain activity. In addition, sports teach us how to work in a team and gain team goals easily. Sports are the foundation of a healthy and strong nation that remains a strong coalition of clever and hardworking people.

Once dealing with sports activity, every person can improve the physiological functions of the body organs and improve the functionality of the entire organism. Sports allow keeping the body healthy and mind peaceful. It is the best therapy for numerous diseases. Sport prolongs people’s lives and makes them more active and satisfied with life in general. If you want to reach the biggest goals in sports, it is easy to build a great professional sports career if to pay enough time and efforts. When you can control your body and make it stronger every day, you can be fully satisfied with your body and mind functioning. Sports also teach you to work in a team and obtain team goals easily taking care of every team member’s thoughts and desires. Therefore, sport should be promoted in schools and colleges for sure.

A2. Give Reason : **2**

‘Sport should be promoted in schools and colleges for sure’

A3.Do as directed : **2**

1. Sports provide a bunch of advantages and improve people's lives significantly.
(Name the tense of the underlined verb to include time and aspect)

2.. shape, active. **(Find collocations from the passage)**

A4. Answer the following

1. How do sport personalities become guiding star of the nation? **2**
2. **Write in your words:** 'Importance of sports for girls'. **2**

B. Write a summary of a passage given Q.4 (A) and suggest suitable title.
[5 marks]

ANSWER KEYS

SCIENCE AND TECHNOLOGY PART – I
{ Chap : 1 + 2 }

Time : $1^{1/2}$ Hours **Total Marks : 30**

Note :1.All questions are compulsory.2.Draw scientifically, technically correct labeled diagrams wherever necessary.3.Start writing each main question on new page.4.Figures to the right indicate full marks .5.For each MCQ (i.e. Q.No.1-A) evaluation would be done for first attempt only.6.For each MCQ correct answer must be alphabet showing correct option. e.g. (I) (a) (II) (b) (III) (c)

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1 (A).Choose the *correct* alternative : **[5]**

I. Weight is --------- quantity .

(A) vector (B) scalar (C) not vector nor scalar (D) universal constant

II. For the motion of an object thrown upwords, acceleration is ----------

(A) positive **(B) negative** (C) zero (D) infinite

III. If we jump 2 m on earth ; how much we can jump on Moon with same force ?

(A) 2 m **(B) 12 m** (C) 18 m (D) 1/3rd m

IV. The number of elements in the first three periods is determined by the electron capacity of the shells and the law of ----------

(A) valency (B) atomic size **(C) electron octet** (D) metallic character

V. Alkaline metals have valency 1. This indicates that its position is at ---------

(A) group 1 (B) period 1 (C) group 2 (D) period 2

(B) Answer the following questions : **[5]**

I. Odd man : Mass,Weight,Kinetic Energy,**Gravitational Constant**,Potential Energy.

II. K.E on surface of earth : ½ mv^2 : : K.E at infinite distance from earth : **0 (Zero)**

III. Which of the following element has largest atom.

$_{19}$**K**	$_{20}$Ca	$_{25}$Mn	$_{30}$Zn	$_{35}$Br

Ans : $_{19}$**K**

IV. Find out correlation among following elements :
Li (6.9), Na(23) , K (39.1)
Ans : This a Dobereiner's Triad.

V. Match the following :

Column I	Column II
1. Bromine **(b)**	(a) Scandium
2. Eka- boron **(a)**	(b) Liquid halogen
	(c) Inert gas
	(d) Germanium

2 (A). Give *any one* Scientific Reason : **[2]**

I. Electronic configuration of the outermost shell is a characteristic of a particular group
Reason: As given on textbook page no.22 from, ' The number of valence electrons in all …….. the electronic configuration of the outermost shell is characteristic of a particular group.'

II. The weight of a body is different on different planets.
Reason : We can explain this using mathematical expression for weight i.e. $w = GmM/R^2$. For any body, its mass is constant, G is constant. Planets are having different masses and radii. Hence ratio M/R^2 is also different for different planets. In this way weight is also different on different planets.

(B) Attempt *any two* of the following questions : **[4]**

I. A solid metal ball of 5 kg is released from a height of 80 m and falls freely to the ground .Take $g = 10\ m/s^2$. What will be velocity of the ball on reaching the ground ?
Solution : m = 5 kg , s = 80 m , u = 0 , a = g = 10 m/s^2
Use Newton's second equation of motion : $s = ut + ½\ at^2$, Put values and calculate t. (Ans : t = 4 s)
Use Newton's first equation of motion : v = u + at . Put values and calculate v. (Ans = 40 m/s)

II. What are the demerits of Mendeleev's periodic table.
Ans : As given on textbook page no.19/20

III. Write down the electronic configurations of given elements: $_{3}Li$, $_{11}Na$, $_{7}N$, $_{13}Al$
Ans : $_{3}$Li : 2,1 $_{11}$Na : 2,8,1 $_{7}$N : 2,5 $_{13}$Al : 2,8,3
IV. Calculate the gravitational force due to the earth on a person of mass 80 kg ?
(Given : Mass of earth = 6×10^{24} kg ,Radius of earth = 6.4×10^{6} m , G = 6.67×10^{-11} Nm^2/kg^2)
Solution: $m1 = 6 \times 10^{24}$ kg, $R = 6.4 \times 10^{6}$ m, $G = 6.67 \times 10^{-11}$ Nm^2/kg^2, m2 = 80kg
Use $F = \frac{Gm_1m_2}{R^2}$. Put values and calculate F. **(Ans : 781 N)**

3. Attempt *any three* of the following questions : [9]

I. A ball is thrown up and reaches a height of 7. 2 m before coming down. What was its initial velocity ? How much total time will it take to come down ? (Take g = 10 m/s^2)
Solution: v = 0, height = 7.2 m, g = 10 m/s^2, Calculate 'u' by using $v^2 = u^2 + 2as$. (Ans: u = 12m/s)
Then calculate 't' by using $s = ut + \frac{1}{2} at^2$. Then calculate 'total t' by adding t + t . (Ans:Total time taken will be 2.4 s.)

II. Element having electronic configuration 2,8,8,1 . Answer the following questions based on this configuration - a) What is the atomic number of this element ? **Ans : 19**
b) To which the group does this element belong ? **Ans : 1st group**
c) To which period does this element belong ? **Ans : 4th period**
d) With which of the following elements would this element resemble ?
Al (13) , Na (11) , Li (3) , N (7) **Ans : Na (11) , Li (3)**

III. Observe given diagram and answer questions given below :
i) Which character increases with decreasing atomic radius along period?
Ans: Non-Metallic character increases with increasing atomic radius along period.
ii) In which direction does metallic character increases along group I and II ?
Ans: Metallic character along group I & II increases going down a group.
iii) How many elements are neither metals nor non-metals ?
Ans : 7 elements are metalloids .

IV. Read the following para and answer the questions :
The earth exerts gravitational force on objects near it . According to Newton's second law of motion , a force acting on a body results in its acceleration. Thus , **the gravitational force due to the earth on a body results in its acceleration. This is called acceleration due to the gravity** and **is denoted by 'g'** .Acceleration is vector. **As the gravitational force on any object due to the earth is directed towards the centre of the earth, the direction of the acceleration due to gravity is also directed towards the centre of the earth i.e vertically downwards.**
a) Define ' Earth's gravitational acceleration'.
b) What is the direction of 'g' ?
c) State the formula to calculate the value of 'g' ? **(Ans : $g = GM/r^2$)**

V. Complete the table :

G	N m^2 kg^2	It is the gravitational force acting between two unit masses kept at a unit distance away from each other	----------
Mass	--------	----------	Same everywhere
Weight	--------	----------	----------

4. Answer any one of the following questions : [5]

I. Explain the difference between Mendeleev's Periodic table and Modern Periodic table. **Ans :** Mendeleev's Periodic Table : **1 . Properties of elements are periodic function of their atomic masses. 2. There were 8 groups and 12 series in this table. 3. Primarily 64 elements arranged in this table4. Merits - As given on textbook page no. 19. 5. Demerits - As given on textbook page no. 19.**
Modern Periodic Table : **1 . Properties of elements are periodic function of their atomic number. 2. There are 18 groups and 7 periods in this table. 3. nearly 118 elements arranged in this table . 4. Merits - The properties of elements can be predicted more accurately with the help of this table. Isotopes can be placed at proper place. Elements with similar properties are arranged in proper order. 5. Demerits - Ambiguity about the position of hydrogen is not removed even in the Modern Periodic Table.**

II. Observe the diagram and answer the questions:

a) Which force present between these two objects ? Define it ?**Ans: Gravitational force is present between these two objects . Def ⁿ : Every object in the Universe attracts every other object with a definite force. This force is directly proportional to the product of the masses of the two objects and is inversely proportional to the square of the distance between them. It is called gravitational force .**

b) If the mass of second object doubled, the gravitational force of attraction between given two bodies will be ?**Ans : If the mass of second object doubled, the gravitational force of attraction between given two bodies will be doubled.**

c) What change in the gravitational force of attraction between given two bodies you will see, if we double the distance between these bodies ? **Ans : If the distance is doubled , the force decreases by a factor of 4.**

d) The 'gravitational force of attraction' is a weaker force but it controls the Universe. State the reason. **Ans : This is possible due to huge masses of planets,stars and other constituents of the Universe.**

e) If two Sumo Wrestlers are sitting at a distance of 3 m from each other. Their masses are 120 kg and 150 kg respectively. What will be the gravitational force between them ?

Ans: $F = \frac{Gm_1m_2}{R^2}$ **, Put values and calculate F. (Ans: 1.334 x 10^{-7} N)**

SCIENCE AND TECHNOLOGY PART – II
{ Chap ; 1 + 2 }

Time : $1^{1/2}$ Hours **Total Marks : 30**

Note :1.All questions are compulsory.2.Draw scientifically, technically correct labeled diagrams wherever necessary.3.Start writing each main question on new page.
4.Figures to the right indicate full marks .5.For each MCQ (i.e. Q.No.1-A) evaluation would be done for first attempt only.6.For each MCQ correct answer must be alphabet showing correct option.e.g. (I) (a) (II) (b) (III) (c)

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1 (A).Choose the *correct* alternative : **[5]**

I. In plant cell , during cell division , cell plate is formed in --------

(A) karyokinesis **(B) cytokinesis** (C) Telophase I (D) Prophase I

II. Glycolysis occurs in ----------

(A) cell membrane **(B) cytoplasm** (C) mitochondria (D) nucleolus

III. Genetic recombination takes place in --------- phase of prophase of of meiosis - I

(A) zygotene **(B) pachytene** (C) leptotene (D) diplotene

IV. Transfer of information from molecule of DNA to mRNA called ---------- process

(A) translation **(B) transcription** (C) translocation (D) mutation

V. ---------- is a proof of evolution.

(A) appendix (B) liver (C) spleen (D) heart

(B) Answer the following questions : **[5]**

I. Find the odd man out : Venation,Leaf petiole,Leaf shape, **Colour of petals**

II. Find correlation : Use of organs : **Legs of swan** :: Disuse of organs : **Ostrich wings**.
(Ostrich wings / Legs of swan / Human Nostrils)

III. Write in one sentence the difference between human hand and patagium of bat in evolutionary evidences.
Ans : Appendix is a vestigial organ while human hand & patagium are anatomical evidences.

IV. Complete the correlation :
Electron Transfer Chain : $FADH_2$: 2 ATPs Formed :: $NADH_2$: 3 ATPs Formed.

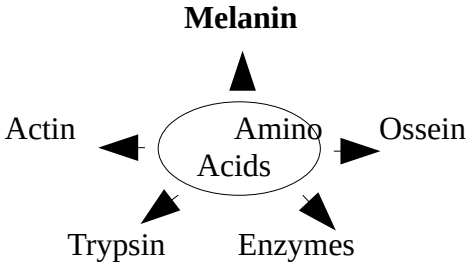
V. Match the following :

Column I		Column II
1. Ossein	**(c)**	(a) Blood
2. Myosin	**(d)**	(b) Skin
		(c) Bones
		(d) Muscles

2 (A). Give *any one* Scientific Reason : **[2]**
I. During exercise we feel tired.
Reason : Our muscle cells perform anaerobic respiration while performing the exercise. Due to this ,less amount of energy is produced in our body and lactic acid accumulates due to which we feel tired.
II. *Peripatus* is a connecting link between Annelida and Arthropoda.
Reason : Peripatus shows segmented body, thin cuticle and parapodia like organs. These characters are typical of Annelids. At the same time it shows tracheal respiration and open circulatory system like Arthropods. Due to these combined characters it is said that Peripatus is a …….

(B) Attempt *any two* of the following questions : **[4]**
I. Explain the process shown in the diagram.
Ans : It is 'cytokinesis process' . Expln : As given on textbook page no. 19
II. Identify the process from given diagram and explain it.
Ans : It is the process of 'Mutation'.
Expln : Living organisms can produce new individuals like themselves due to genes only and some of those genes are transmitted to the next generation without any changes. However, sometimes sudden changes occur in those genes. Sometimes any nucleotide of the gene changes its position that causes a minor change which is nothing but the 'mutation'. It may cause genetic disorders like sickel cell anemia
III. Write a note on Vestigial organs
Ans : As given on textbook page no.5.

IV. Complete the concept map :



3. Attempt *any three* of the following questions : [9]

I. Explain importance of following organisms with respect to evolution

1. Lung Fish 2. Duckbill Platipus (**Ans : As given on Textbook Page No. 6 &7)**

II. Distinguish between Glycolysis and TCA cycle.

Ans : As given on textbook page no. 13

III. Explain Electron transfer chain

Ans : As given on textbook page no.14

IV. Read the para given below and answer the questions given below.

Morphological changes occurring in living organisms due to activities or laziness of that organism Morphological changes occurring in living organisms are responsible for evolution. Maximum use of organs make it strong or more useful. No use of the organ can make it weak or degenerate it over a generations. These modifications in the body can be transferred from one generation to another generation. But this theory is not accepted completely.

a) Which theory of evolution is indicated in this para ?

b) Who proposed this theory ?

c) Explain this theory. Why it is not accepted widely ?

Ans: I) These are statements of Lamarck's Theory of Evolution' II) Jean-Baptist Lamarck proposed this theory (1/2 mark each) III) Explain as given on textbook page no.8 (2 marks)

V. Observe the diagram and answer the questions :

a) Which evolutionary evidence shown in this picture ?

b) How it describes evolution . Explain

Ans : Embryological evidence is shown in this picture. Expln : Comparative study of embryonic developmental stages of various vertebrates given in the picture shows that all embryos show extreme similarities during initial stages and those similarities decrease gradually. Similarities in initial stages indicate the common origin of all these animals. This is one of evidence of evolution.

4.Answer any one of the following questions : [5]

I. Explain the process of mitosis in detail. Draw the diagrams for at least two phases.

Ans : As given on textbook page no. 18 & 19 :

1. Prophase 2. Metaphase 3. Anaphase 4.Telophase (1mark each)

Cytokinesis – (1mark)

II. a) Complete the table :

	Term	**Definition**	**Example**	**Complementary Process/Example**
1	Transcription	**The process of mRNA from DNA**	mRNA	Translation
2	**Species**	Group of organisms that produces fertile individuals through natural reproduction	Tiger	**Rabbit**
3	Acquired Characters	Change in organs/body due to use-disuse during organism's life time	**Wings of emu have become weak due to no use**	Ancestry of acquired Characters
4	Morphological Evidences	Similarities seen in animals and plants	**Shape of Venation**	Leaf shape

b) Identify the theory of evolution with help of given set of statements and answer the questions :

All the organisms compete with each other in a life threatening manner. Nature allows those organisms to live who are fit to live in that environment. In California mustard plant having short growing season survived a drought. Some people are more resistant to malaria and can survive in a spread of malaria in Africa. Apart from a main role of nature in such a evolution process , there are other slow and abrupt changes also seen in nature. Sustained and naturally selected organisms perform reproduction with their own specific characters.

Que : I) Which theory of evolution is indicated in these statements?

II) Who proposed that theory ?

III) Which objections raised against this theory ?

MATHS (PART – I)
{ Chap : 1 + 2 }

Time: $1^{1/2}$ Hours **Max. Marks: 30**

Note: 1. All questions are compulsory. 2. Use of calculator is not allowed.
3.Figures to the right of questions indicate full marks.

1.(A) Choose the correct alternative: **[3]**

I. For drawing graph of 4x + 3y = 13 , if x = -2. What is the value of y ?

a) 3 b) -3 c) 4/3 **d) 7**

II. What is the value of $\begin{vmatrix} 3 & 2 \\ 5 & 7 \end{vmatrix}$

a) 3 b) -2 c) - 5 **d) 11**

III. What will be the value of discriminant for equation $y^2 + 9y - 5 = 0$

a) 200 b) - 20 c) -54 **d) 101**

(B) Solve the following questions : **[3]**

I. If D= 14 , Dx = -14 , Dy = - 28. Then what will be the value of y ?
Soln : (Ans : -2)

II. Obtain a quadratic equation if roots are -2 and -3 .
Soln : Take α = - 2 , β = - 3 .Find (α + β) and (α β) .Then use x^2 - (α + β) x + (α β) (Ans : $x^2 + 5x + 6$)

III. Find value of determinant .

$A = \begin{vmatrix} 3\sqrt{2} & 7 \\ 2 & 2\sqrt{2} \end{vmatrix}$ **Soln : (3√2 x 2√2) - (2 x 7) = 12 – 14 = -2**

IV. Find α + β and α x β, if α & β are roots of a quadratic equation $2x^2 + 4x - 7 = 0$
Soln : a = 2, b= 4 , c = -7. Use (α + β) = -b/a & α x β = c/a. Put values & calculate. (Ans : -2 &-7/2)

2.(A) Complete the following activities (*Any One*): [2]

I Find the value of following determinant :

Activity :

$$A = \begin{vmatrix} 5/2 & 2/4 \\ 3/4 & 1/4 \end{vmatrix} = (\boxed{5/2} \times 1/4) - (\boxed{2/4} \times 3/4)$$

$$= 5/8 - \boxed{6/16} = \frac{10 - 6}{\boxed{16}}$$

Hence value of determinant is **1/4**

II. Find quadratic equation with help of given information and complete the table.

Sum of the roots	3	- 5
Product of the roots	- 9	7
Quadratic Equation	**$x^2 - 3x - 9 = 0$**	**$x^2 + 5x + 7 = 0$**

(B) Solve the following questions (*Any Three*) : [6]

I. Solve the quadratic equation by factorization method : $m^2 - 15m + 14 = 0$

Soln : (Ans : m = 14 or m = 1)

II. Obtain a quadratic equation if roots are $1 - 2\sqrt{3}$ and $1 + 2\sqrt{3}$.

Soln : $\alpha = 1 - 2\sqrt{3}$ & $\beta = 1 + 2\sqrt{3}$ .Then find $\alpha + \beta$ & $\alpha\beta$. Put these values in $x^2 - (\alpha + \beta)x + \alpha\beta = 0$ and find eq. (Ans : $\alpha + \beta = 2$ & $\alpha\beta = -11$; Eq. $x^2 - 2x - 11$)

III. Solve using formula : $x^2 - 3x - 4 = 0$

Soln: (Ans : x = 4 or x = -1)

IV. The perimeter of a rectangle is 34 cm .The length of the rectangle is more than triple its breadth by 1. Then Find length and breadth by determinant method.

Soln: Take length of rectangle x & breadth y. Put eq. wrt first & second conditions 2 (x+y) = 34 …. x+y = 17 ; x = 3y + 1 ….. x – 3y = 1 . Then solve these by determinant method. (Ans : x = 13 cm & y = 4 cm)

V. If y = 2 is a root of equation $ky^2 - 12y - 8 = 0$ .Then find the value of k ?

Soln : Put value of y in the eq and calculate . 4K= 32 . (Ans : k = 8)

3 (A). Complete the following activity : **[3]**

I .Determine nature of roots of the quadratic equation by using formula :

$m^2 + 3m - 12 = 0$

Activity : Compare with $ax^2 +$ **bx** $+ c = 0$

We get , a = 1 , b = **3** , c = - 12

$b^2 -$ **4ac** $= 3^2 - 4 \times$ **1** $\times (-12)$

D = 9 — **(- 48)**

D = 57

Hence $b^2 - 4$ **ac** > 0

Hence roots of the equation are **real** and unequal

II. x + y = 4; 5x – 3y = 12

Activity : x + y = 4 …….. I and 5x – 3y = 12 …… II

Let's solve the equations by eliminating y.

By multiplying equation I by 3, we get

3x + **3y** = 12 ……. III

Let's add eq . III & II

3x + **3y** = 12 ……. III

\+

5x – 3y = 12 ……. II

8x = 24 Hence x = **3**

Substituting x = **3** in eq . I , we get

3 + y = 4 Hence y = **1**

(B) Solve the following questions (Any Two): **[6]**

I. Solve equations by drawing graphs of x + y = 7 and 3x – y = 1 .

Solution : Find at least 4 ordered pairs for both of these given equations . Then draw plot points on graph paper and draw lines. Note Co-ordinates of Point of intersection of the two lines. These co-ordinates indicate solution of given equations .(Ans : Coordinates will be x = 2 and y = 5)

II. If the airplane travels 720 km with uniform speed. If speed is increased by 8 km/hr, it takes 60 min less to cover the same distance. Find the initial speed of the plane.

Soln : Let the initial speed of the plane be x km/hr.

Time to cover 720 km = distance/speed = 720/x hrs.

New time after increasing speed = 720/x+8

For given condition, $\frac{720}{x+8} = \frac{720}{x} - \frac{60}{60}$

$\frac{720}{x+8} - \frac{720}{x} = \frac{60}{60}$; $\frac{1}{x} - \frac{1}{x+8} = \frac{60}{60 \times 720}$, $\frac{x+8-x}{x(x+8)} = \frac{1}{720}$

$\frac{8}{x^2+8x} = \frac{1}{720}$; $x^2 + 8x = 5760$; $x^2 + 80x - 72x - 5760 = 0$

$(x + 80)(x - 72) = 0$ **(Ans : x = - 80 or x = 72)**

III. A shopkeeper sold item A and item B as follows. Find Selling prices of both items A and B . **Soln : Put equations wrt above info. 10x + 5y = 4000 & 24x + y = 7400. Multiply** II **by 5, it will be 120x + 5y = 37000 . Then subtract** I **from** III **and find x . Put value of x in eq** I **and find y . (Ans : x = 300 Rs. y = 200 Rs.)**

Monthly Sale	Item A	Item B	Total Sale
August	10 pieces	5 pieces	Rs.4000/-
September	24 pieces	1 piece	Rs. 7400/-

IV. $\frac{2}{5}x + y = \frac{11}{5}$; $x + \frac{2}{3}y = \frac{11}{3}$

Soln : Multiply I by 5 and II by 3 . Then subtract III from IV & Find y.Put value of y in III and find x (Ans : x = 3 and y = 1)

V. Solve by Completing Square Method : $x^2 + x - 20 = 0$

Ans : Roots (-5 , 4)

4.Solve the following questions (Any One): [4]

I. A boat travels 12 km upstream and 20 km downstream in 4 hours . Same boat travels 28 km upstream and 40 km downstream in 9 hours .What is the speed of boat in still water and speed of water current ?

Soln :Let the speed of the boat in still water be x km/hr and the speed of water current be y km/hr. Speed of boat in downstream = (x+y) km/hr & that in upstream = (x- y) km/hr. Now distance = speed x time i.e. time = distance/speed. Time taken by the boat to travel 12 km upstream = 12/x-y hrs & it takes 20/x+y hrs to travel 20 km downstream. Now put eq.

For first 7 second conditions :

second conditions : 12 + 20 & 28 + 40

$\frac{}{x-y}$ $\frac{}{x+y}$ $\frac{}{x-y}$ $\frac{}{x+y}$, take 1/x-y = m & 1/x +y = n

Put eq. 12m + 20n = 4 & 28m + 40n = 9 .Solve & find m & n .Then find x – y & x + y .

x + y = 20 & x – y = 4 Solve these two eqs & find x & y

(Ans : x = 12 km/hr & y = 8 km/hr)

II. A three digit number is equal to 22 times the sum of its digits .If the digits are reversed the new number is 99 more than the old number .The middle digit is equal to the sum of extreme digits.Find the original number .

Soln : Three digit number should be : 100x + 10 (x + y) + y =110x + 11y

The sum of digits : x + (x + y) + y = 2x + 2y

From first condition , Given Number = 22 (sum of digits)

110x + 11y = 22 (2x + 2y) ; 110x + 11y = 44x + 44y

110x – 44y = 44y – 11y ; 66x – 33y = 0 ---------- I

Now, the number obtained by reversing digits will be

100y + 10 (x+y) + x = 110y + 11x

From 2nd condition, Given number + 99 = new number

110y + 11x + 99 = 110y + 11x

99x – 99y = - 99

x – y = - 1

x = y - 1 ---------- II

Now substitute value of x in eq.I and find value of y. (y = 2) . Then find value of x by putting y=2 in eq.II **(x=1) . <u>Now number is 132</u>.**

III. There are 120 students standing in a ground .The number of students in each row is 7 more than that in each column. Find the number of students standing in each row and column .**<u>Soln</u>: Take no. of students in a column x . then no. of students in row will be x + 7 .Total no. of students will be x(x + 7) = 120. $x^2 + 7x – 120 = 0$;**

Find factors and solve. (Ans: x = 8 & x+ 7 = 15)

5. Solve the following questions (Any One): [3]

I. Solve following simultaneous equations by graphical method.

x + y = 0 ; 3x – y = 8

<u>Soln</u> : Put ordered pairs for these two eqs & draw graph with help of these pairs. And find co-ordinates of the point of intersection of the two lines.

(Ans : (-2,2))

II. If α and β are the roots of the quadratic equation $m^2 – 3m – 5 = 0$.

Find values of $\alpha^2 + \beta^2$ and $\alpha^3 + \beta^3$

<u>Soln</u> : Take a= 1 , b = -3 , c = -5 . Then find α + β = -b/a & α β = c /a . Then put these values in $\alpha^3 + \beta^3 = (\alpha + \beta)^3 – 3 \alpha \beta (\alpha + \beta)$ & $\alpha^2 + \beta^2 = (\alpha + \beta)^2 – 2 \alpha \beta$.

(Ans : α + β = 3, α β = 19 ;

$\alpha^2 + \beta^2 = 19$, $\alpha^3 + \beta^3 = 54$)