S.H.I.P.S.
[A Premier Institution

Home Assignment

2024-25

Grade-IX

Name: _____

Section: _____   Roll. No. _____

Note:

1. **Assignment Marks will be added in the Terminal Assessment.**

2. **Parents are required to let their child do his/her assignments on his/her own.**

3. **Use loose sheets if required to perform the task.**

4. **Best Assignment of the year will be recognised.**

'Summer Vacation weaves a magic wand over the little world of our kids, everything softer and more beautiful.'

So, Hello Summer!!

The seven Golden Commandments for an exemplary Summer Vacation [to be followed by Parents Ward Duo].

a) What about Dining Together? A family that dines together, stays happy forever.

Feasting together with your ward atleast twice a day will strengthen bonds between you and your ward. They will share with you their innermost desires, once you start this process.

b) Teaching them Dignity of Labour: Asking your ward to engage in household chores like cleaning their dishes after meals, assisting maids and house servants, or gardeners or assisting you in cooking and serving food.

c) Visit to Orphanages: Instead of visiting malls, which promotes pseudo culture, allow your kids to visit orphanages so that they connect with the lesser fortunate, learn about their plight. Only by seeing the downtrodden, first hand, can they develop 'Empathy'.

d) Kinship with Mother Nature:- In order to develop affinity and accordance with nature, let the kids work in their kitchen garden, let them plant a sapling or a seed in medium sized pot on the first day of summer break. Ask them to nurture it throughout the holiday and to carry to school with their name tags on 11 July, 2018. This sapling will be nurtured by your ward in the school for the next few years. This way they will learn the value of 'caring' and also appreciate all that you do for them.

e) Shun the Indoor Era: Let them gel with rustic, invigorating natural environment. Let them steer clear of indoor culture which has made them slothful. Let them get dirty, let them bask in natural sunshine, prohibit air conditioners for them.

As Emerson said, "Live in the sunshine, swim the sea, drink the wild air."

Let your kids be adventurous, wild. Let them be REAL KIDS FOR A CHANGE.

f) Sow in them seeds of Philanthropy and Good Humanitarianism: Allow them to donate their old, unused stuff to the needy. Teach them to be generous. Let them donate with their own hands, their discarded clothes, stationery, bags, books, bottles, tiffin boxes etc.

So Dear Parents,

LET HOLIDAY MODE BE
ACTIVATED

Holidays are a perfect time to reflect on our blessings and seek out ways to make life better for those around us.

May Your Days be Merry and Bright

Hope You Enjoy a Blissful Bonding with Your Ward.

LET THE MEMORIES OF HOLIDAYS LAST FOREVER

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ENGLISH

1.Book Review Project: choose a book you haven't read before, read it over the vacation, and write a detailed review. You can include summaries, character analyses, and personal reflections.

2.Literary Analysis of a Movie: watch a movie of their choice and write an analysis comparing it to a piece of literature they have studied in class. You can explore themes, character development, and plot structure.

3.Design a Book Cover: Choose a book and design a new cover for it. You can explain their design choices in a short paragraph.

4.Literary Scavenger Hunt: Create a list of literary elements (e.g., simile, foreshadowing, protagonist) and find examples of each in books read over the vacation. You can compile your findings in a creative format, such as a poster or a digital presentation.

5.Literary Travel Brochure: Choose a setting from a book you read and create a travel brochure for that location. You can include descriptions, maps, and illustrations.

6.Poetry Anthology: Create a poetry anthology with a theme of their choice. You can include poems they've written themselves, as well as poems by famous poets that resonate with the theme.

Literature

1.Do extracts of the poems(BBC)

  The road not taken

   Wind

2.Do short questions of l -1, 2,3 (Beehive (BBC)

HINDI

ग्रीष्मकालीन कार्य

कक्षा नौवीं

1.भारत के प्रमुख त्योहारों पर परियोजना तैयार करें।

2.पर्वतारोहण पर जाते समय ले जाने वाले सामान की सूची चित्र सहित बनाएं।

3.भारत के विभिन्न राज्यों का 15 दिनों का तापमान नोट करें।

4.ग्लोबल वार्मिंग के कारण और निवारण से संबंधित पोस्टर बनाएं एस.डी.जी. (13)

PUNJABI

ਹੇਠ ਲਿਖੀਆਂ ਕਾਵਿ -ਟੁਕੜੀਆਂ ਨੂੰ ਪੜ੍ਹ ਕੇ ਪ੍ਰਸ਼ਨਾਂ ਦੇ ਉੱਤਰ ਦਿਓ-

(I) ਬਾਬਾ ਮੈ ਰਾਜਾ ਹਾਂ, ਨਾਂ ਹੈ ਰਣਜੀਤ ਮੇਰਾ

 ਨੇਕੀ ਹੈ ਕਾਰ ਮੇਰੀ, ਸਾਂਝਾ ਹੈ ਧਰਮ ਮੇਰਾ।

 ਪਰਜਾ ਲਈ ਜਾਨ ਦਿਆਂ ,ਪੇਸ਼ਾ ਹੈ 'ਪ੍ਰੀਤ' ਮੇਰਾ।

 ਕਾਬਲ ਦੀਆਂ ਕੰਧਾਂ ਤੱਕ, ਮੈਂ ਪਾਉਂਦਾ ਘੁਕਰ ਹਾਂ।

 ਪਰ ਪਿਆਰੇ ਬਾਬਾ ਜੀ ਪਰਜਾ ਦਾ ਕੂਕਰ ਹਾਂ।

 ਕਿਸਦਾ ਧਰਮ ਸਾਂਝਾ ਹੈ?

ਮਹਾਰਾਜਾ ਰਣਜੀਤ ਸਿੰਘ ਦਾ ਰਾਜ ਕਿੱਥੋਂ ਤੱਕ ਫੈਲਿਆ ਹੋਇਆ ਸੀ?

ਪ੍ਰੀਤ ਸ਼ਬਦ ਤੋਂ ਕੀ ਭਾਵ ਹੈ?

ਮਹਾਰਾਜਾ ਰਣਜੀਤ ਸਿੰਘ ਕਿਹਨਾਂ ਦਾ ਕੂਕਰ ਹੈ?

(II) ਲੱਗੀ ਨਜ਼ਰ ਪੰਜਾਬ ਨੂੰ, ਏਹਦੀ ਨਜ਼ਰ ਉਤਾਰੋ।

 ਲੈ ਕੇ ਮਿਰਚਾਂ ਕੇੜੀਆਂ, ਏਹਦੇ ਸਿਰ ਤੋਂ ਵਾਰੋ।

 ਸਿਰ ਤੋਂ ਵਾਰ ਕੇ, ਅੱਗ ਦੇ ਵਿੱਚ ਸਾੜੋ ।

ਲੱਗੀ ਨਜ਼ਰ ਪੰਜਾਬ ਨੂੰ, ਏਹਦੀ ਨਜ਼ਰ ਉਤਾਰੋ।

 ਮਿਰਚਾ ਜ਼ਹਿਰੋਂ ਕੇੜੀਆਂ, ਮਿਰਚਾਂ ਸਿਰ ਸੜੀਆਂ।

 ਕਿਧਰੋਂ ਲੈਣ ਨਾ ਜਾਣੀਆਂ ,ਵਿਹੜੇ ਵਿੱਚ ਬੜੀਆਂ।

 ਪਹਿਲੀ ਭਰਵੀਂ ਫ਼ਸਲ ,ਇਹਨਾਂ ਦੀ ਉਦੋਂ ਲੱਗੀ।

 ਜਦ ਆਪੇ ਪੰਜਾਬੀਆਂ ,ਪੰਜਾਬੀ ਛੱਡੀ।

ਕਿਸ ਨੂੰ ਨਜ਼ਰ ਲੱਗੀ ਹੈ?

ਮਿਰਚਾਂ ਕਿਸ ਤੋਂ ਵਾਰ ਕੇ ਕਿਸ ਵਿੱਚ ਸਾੜਨ ਲਈ ਕਿਹਾ ਗਿਆ ਹੈ?

ਮਿਰਚਾਂ ਕਿਸ ਤੋਂ ਕੇੜੀਆਂ ਹਨ?

ਪਹਿਲੀ ਭਰਵੀਂ ਫ਼ਸਲ ਕਦੋਂ ਲੱਗੀ?

(3) ਹੇਠ ਦਿੱਤੇ ਚਿੱਤਰਾਂ ਦਾ ਵਰਣਨ ਕਰੋ-

1.

2.

(4) ਹੇਠ ਲਿਖਿਆ ਵਿਸ਼ਿਆਂ ਤੇ ਲੇਖ ਰਚਨਾ ਲਿਖੋ-

 ਵਿਗਿਆਨ- ਵਰ ਕਿ ਸਰਾਪ , ਸ਼ਹਿਰੀ ਤੇ ਪੇਂਡੂ ਜੀਵਨ ਵਿੱਚ ਅੰਤਰ

(5) ਤੁਹਾਡੇ ਇਲਾਕੇ ਵਿੱਚ ਮਿਲਾਵਟੀ ਵਸਤਾਂ ਸ਼ਰੇਆਮ ਵੇਚੀਆਂ ਜਾ ਰਹੀਆਂ ਹਨ। ਇਸ ਸਬੰਧੀ ਜ਼ਿਲ੍ਹਾ ਸਿਹਤ ਭਲਾਈ ਅਫਸਰ ਨੂੰ ਬਿਨੈ - ਪੱਤਰ ਲਿਖੋ।

(6) ਆਪਣੇ ਮੁਹੱਲੇ ਵਿੱਚ ਸਵੇਰੇ - ਸ਼ਾਮ ਅਤੇ ਦੇਰ ਰਾਤ ਤੱਕ ਵੱਜਦੇ ਲਾਊਡ ਸਪੀਕਰਾਂ ਦੇ ਸ਼ੋਰ ਨੂੰ ਬੰਦ ਕਰਵਾਉਣ ਸਬੰਧੀ ਜ਼ਿਲੇ ਦੇ ਡਿਪਟੀ ਕਮਿਸ਼ਨਰ ਸਾਹਿਬ ਨੂੰ ਬਿਨੈ - ਪੱਤਰ ਲਿਖੋ

7. ਪੋਸਟਰ - ਪੰਜਾਬੀ ਸੱਭਿਆਚਾਰ

8. (Assignment)

ਮੇਲੇ ਅਤੇ ਤਿਉਹਾਰ

 (Roll no 1 -16)

ਚਲੰਤ ਘਟਨਾਵਾਂ ਦਾ ਵਰਨਣ

(Roll no 17-35)

SCIENCE

I . Choose the correct option from the following;

Q1. Which of the following cannot be considered a form of matter?
(a) Atom
(b) Water
(c) Humidity
(d) Electron

Q2. Which of the following causes the temperature of a substance to remain constant while it is undergoing a change in its state?
(a) Latent heat
(b) Lattice energy
(c) Loss of heat
(d) None of these

Q3. When water at 0°C freezes to form ice at the same temperature of 0°C, then it:
(a) Absorbs some heat
(b) Releases some heat
(c) Neither absorbs nor releases heat
(d) Absorbs 3.34 x 105J/kg of heat

Q4. Which of the following statement is correct?
(a) Substances that exist as liquids at room temperature typically have melting and boiling points lower than that of room temperature.
(b) The process in which a substance transitions directly from a solid to a gas state without going through the liquid state is known as sublimation.
(c) To convert a temperature from the Celsius scale to the Kelvin scale, add 273 to the given temperature.
(d) The density of ice is lower than that of water.

Q5. Under which of the following circumstances would the distance between molecules of hydrogen gas increase?
(i) Applying greater pressure to hydrogen within a sealed container.
(ii) Leakage of a portion of the hydrogen gas from the container.
(iii) Expanding the volume of the container holding hydrogen gas.
(iv) Introducing additional hydrogen gas into the container without altering its volume.
(a) (i) and (iii)
(b) (i) and (iv)
(c) (ii) and (iii)
(d) (ii) and (iv)

II. Answer the following questions

1. What is matter? What are the physical states of matter?
2. With the help of an activity, show particulate nature of matter.
3. What are characteristics of particles of matter?
4. What is diffusion? Give an example.
5. Write any five characteristics of solids, liquids and gases.
6. Why can we smell hot food from a distance?
7. Why does a solid change into liquid on heating?
8. Define latent heat of fusion.
9. Give reason – A gas fills completely the vessel in which it is kept.
10. Why a wooden table should be called solid?
11. Why more serious burns are caused by steam at 1000c than water at same temperature?
12. Why can a sponge be compressed though it is a solid?
13. Carry out following conversion (a)
500c to Kelvin (b) 200 k to Celsius.

III. Activity. based questions

14. Explain the process of Sublimation in detail.
15. Show that gases are compressible but solids and liquids are not.
16.How will yoy show that Particles of matter are very small.

IV. **Directions:** In each of the following questions, a statement of Assertion is given, and a corresponding statement of Reason is given just below it. Of the statements, given below, mark the correct answer as:

(a) Both assertion and reason are true, and reason is the correct explanation of assertion.
(b) Both assertion and reason are true, but reason is not the correct explanation of assertion.
(c) Assertion is true, but reason is false.
(d) Assertion is false, but reason is true.

1.Assertion : A gas can easily be compressed by applying pressure.
Reason : Since the inter-particle spaces between gases are very large, they can decrease by applying pressure.
2.Assertion : Gases exert pressure on the walls of the container.
Reason : The intermolecular force of attraction is very strong in gases.
3.Assertion : It is easier to cook food at sea level as compared to higher altitudes.
Reason : The boiling point of water increases at high altitudes.
4.Assertion : When a solid melts, its temperature remains the same.

Reason : The heat gets used up in changing the state by overcoming the forces of attraction between the particles.

5.Assertion : The conversion of a solid directly into a gas is known as sublimation.

Reason : Naphthelene does not leave residue when kept open for sometime.

* Write and learn atomic numbers and symbols of first 20 elements with their names.
* Make a A4 sheet based on activity with respect to Chapter Matter in our surroundings. (any topic)

BIOLOGY

The fundamental unit of life -Cell

MULTIPLE CHOICE QUESTIONS

1. The rough ER is so named because it has an abundance of
(a) mitochondria
(b) Golgi bodies
(c) lysosomes
(d) ribosomes.

2. The plant cells are more rigid than the animal cells due to
(a) cell wall
(b) lysosome
(c) plastids
(d) both (a) and (b

3. Animal cell lacks
(a) mesosome
(b) ribosome
(c) vacuole.
(d) lysosome

4. Which of the following organelles in the cell is referred to as the suicidal bags or disposal units?
(a) Lysosomes
(b) Peroxisomes
(c) Glyoxysomes
(d) None of these

5. Within chloroplasts, light is captured by
(a) thylakoids within grana
(b) grana within cisternae
(c) cisternae within grana
(d) grana within thylakoids.

ASSERTION /REASONING

Assertion & Reason Type Questions:-

Read the Assertion and Reason carefully to mark the correct option out of the options given below:

(A) Both Assertion and Reason are true and Reason is the correct explanation of Assertion.

(B) Both Assertion and Reason are true but Reason is not the correct explanation of Assertion.

(C) Assertion is true but Reason is false.

(D) Assertion is false but Reason is true.

ASSERTION:- Mitochondria are known as powerhouse of the cell

REASON:-mitochondria are used to bring about energy generating activities of the cell

ASSERTION:- All cells contain genetic materials in the form of DNA.

REASON:-jeans are self replicating units and are located on the chromosomes.

ASSERTION:-Plant cell does not burst on account of endosmosis when kept in hypotonic solution.

REASON:-Plant cell possesses large vacuoles that remove excess water entering the cell and prevent it from bursting.

SHORT ANSWER TYPE QUESTIONS:-

1. GIVE ANY TWO SIMILARITIES BETWEEN MITOCHONDRIA AND PLASTIDS.

2. WHICH ORGANELLE HELPS A PLANT CELL TO MAINTAIN ITS TURGIDITY. HOW?

3. DEFINE OSMOSIS. IN WHAT TWO WAYS IT IS DIFFERENT FROM DIFFUSION?

4. WHAT ARE THE TWO CONDITIONS REQUIRED FOR OSMOSIS?

5. NAME A CELL ORGANELLE FOUND ONLY IN A PLANT CELL AND NAME ITS TYPES.

HOTS

1. You generally add salt into the vegetables during the cooking process after adding salt vegetables release water. What mechanism is responsible for this?

2.A person takes a concentrated
solution of salt after sometime, he starts vomiting. What is the phenomenon responsible for such a situation? Explain.

ACTIVITY

Two beakers A and B that contain plain water and concentrated sugar solution respectively. Equal number of dry raisins are kept in them for a few hours and then taken out

A. Explain the reason for the difference in the physical appearance of raisins which were taken out of the two beakers

B. On the basis of above observation categorise the two solutions as hypotonic and hypertonics

MODEL:- working model (Any one)
- Hydraulics.
- Solar energy
- Different types of Pollution
- Biological models
- Waste management
- Natural disasters Proofing buildings
- Chemistry related
- Physics related Model
- Hydroponics

Note :-Complete fair notebook Learn full chapter.

➤ **Multiple choice questions** [07]

1. Which of the following statements is correct for a particle travelling with a constant speed:

   (A) Its position remains constant as time passes.
   (B) It covers equal distances in unequal time intervals.
   (C) Its acceleration is zero.
   (D) It does not change its direction of motion.

2. When two bodies moves uniformly towards each her then they cross each other at the speed of 10m/s. If both the bodies move in the same direction, then they cross each other at the speed of 6m/s. The speed of both bodies are:

   (A) 8m/s, 2m/s
   (B) 8m/s, 4m/s
   (C) 6m/s, 2m/s
   (D) 6m/s, 4m/s

3.
   i.   y = constant: Uniform motion
   ii. a = constant: _____

   (A) Non-uniformly accelerated.
   (B) Uniformly accelerated.
   (C) v = 0 at, t = 0.
   (D) Circular motion.

4. In a motion with constant acceleration the velocity is reduced to zero in 5 seconds and after covering a distance of 100m. The distance covered by the particle in next 5 second will be:

   (A) zero
   (B) 250m
   (C) 100m
   (D) 500m

5. A car travels 10m in 5 seconds, 20m in next 10 seconds and 30m in the last 10 seconds. The average speed of the motion is:

   (A) 2.0ms^{-1}
   (B) 2.2ms^{-1}
   (C) 30ms^{-1}
   (D) 2.4ms^{-1}

6. A body moving in a circle of radius r, covers $\frac{3}{4}$th of the circle. The ratio of the distance to displacement is:

   (A) $\frac{2\sqrt{2}}{3\pi}$
   (B) $\frac{3}{2\sqrt{2}}$
   (C) $\frac{3\sqrt{2}}{2\pi}$
   (D) $\frac{3\pi}{2\sqrt{2}}$

7. A merry-go-round is rotating about a vertical axis at the rate of 60rev/min. If the distance of a man from its axis is 2m, his linear speed is:

   (A) 1ms^{-1}
   (B) 2ms^{-1}
   (C) $4\pi \text{ms}^{-1}$
   (D) $2\pi \text{ms}^{-1}$

8. Four cars A, B, C and D are moving on a levelled, straight road. Their distance-time graphs are shown in the given figure. Which of the following is the correct statement regarding the motion of these cars?

   a. Car A is faster than car D.
   b. Car B is the slowest.
   c. Car D is faster than the car C.
   d. Car C is the slowest.

a. If both Assertion and Reason are true and Reason is the correct explanation of Assertion.
b. If both Assertion and Reason are true, but Reason is not the correct explanation of Assertion.
c. If Assertion is true, but Reason is false.
d. If Assertion is false, but Reason is true.
e. If Assertion and Reason both are false.

Assertion: Acceleration of a body can be calculated from velocity-time graph.

Reason: Area of velocity-time graph gives distance travelled by the body.

➤ short questions   [04]

15. An object is moving along a straight line with uniform acceleration. The following table gives the velocity of the object at various instants of time:

| Time (in sec.):	0	1	2	3	4	5	6
Velocity (in m/s):	2	4	6	8	10	12	14

Plot the graph.

From the graph,
   i. Find the velocity of the object at the end of 2.5 seconds.
   ii. Calculate the acceleration.
   iii. Calculate the distance covered in the last 4 seconds.

16. In the figure below is shown the time-distance graph of cyclist.
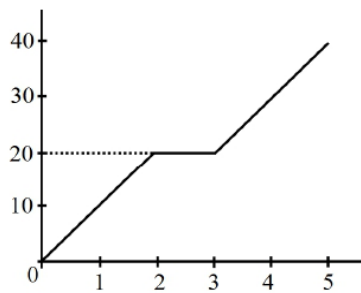
Find out from the graph average speed in the whole journey.

17. In which one of the following cases will the distance covered and the magnitude of the displacement are not the same? Justify.
   i. A passenger in a train travels from Delhi to Kolkata.
   ii. A raindrop falling in still air.
   iii. An athlete completes one lap in a race.

18. Three speed-time graphs are given below:
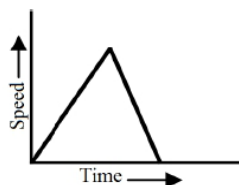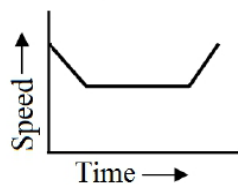
9. A motorcycle is being driven at a speed of 20m/s when brakes are applied to bring it to rest five seconds. The deceleration produced in this case will be:
    a. $+4m/s^2$
    b. $-4m/s^2$
    c. $+0.25m/s^2$
    d. $-0.25m/s^2$

10. In which of the following cases of motion, the distance moved and the magnitude of displacement are equal?
    a. If the car is moving on straight road.
    b. If the car is moving on circular road.
    c. If the pendulum is moving to and fro.
    d. If a planet is moving around the sun.

➤ **Assertion - Reason Type questions** [04]

11. In the following questions, a statement of Assertion is given by the corresponding statement of Reason. Of the statements, mark the correct answer as:
    a. If both Assertion and Reason are true and Reason is the correct explanation of Assertion.
    b. If both Assertion and Reason are true, but Reason is not the correct explanation of Assertion.
    c. If Assertion is true, but Reason is false.
    d. If Assertion is false, but Reason is true.
    e. If Assertion and Reason both are false.

    Assertion: A body performing uniform circular motion with constant speed may have acceleration.

    Reason: When speed of a body remains constant, then its acceleration is always zero.

12. In the following Questions, the Assertion and Reason have been put forward. Read the statements carefully and choose the correct alternative from the following:
    a. Both the Assertion and the Reason are correct and the Reason is the correct explanation of the Assertion.
    b. The Assertion and the Reason are correct but the Reason is not the correct explanation of the Assertion.
    c. Assertion is true but the Reason is false.
    d. The statement of the Assertion is false but the Reason is true.

    Assertion: Equations of motion can when the acceleration is a = 2t where t seconds.

    Reason: The slope of a v-t graph with 60° inclination is greater than 30° inclination.

13. In the following Questions, the Assertion and Reason have been put forward. Read the statements carefully and choose the correct alternative from the following:
    a. Both the Assertion and the Reason are correct and the Reason is the correct explanation of the Assertion.
    b. The Assertion and the Reason are correct but the Reason is not the correct explanation of the Assertion.
    c. Assertion is true but the Reason is false.
    d. The statement of the Assertion is false but the Reason is true.

    Assertion: The slope of distance time graph gives acceleration of the body.

    Reason: Greater the slope of distance time graph, more is the speed of the body.

14. In the following questions, a statement of Assertion is given by the corresponding statement of Reason. Of the statements, mark the correct answer as:
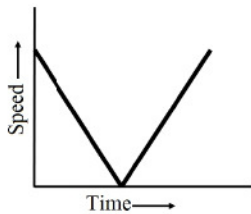
Which graph represents the case of:

    i.   A cricket ball thrown vertically upwards and returning to the hands of the thrower?

   ii.   A trolley decelerating to a constant speed and then accelerating uniformly?

19.   Given figures represent the motion of two objects P and Q. Which of the objects has positive acceleration and which one has negative acceleration?
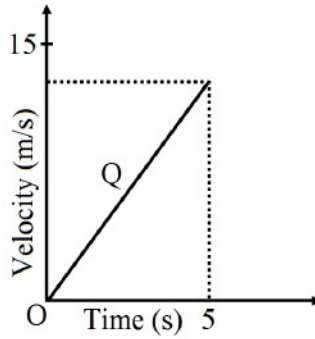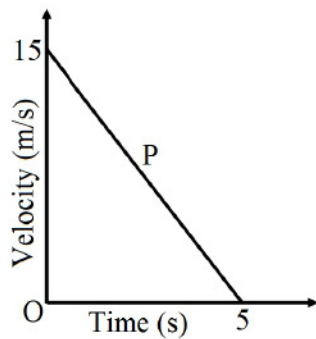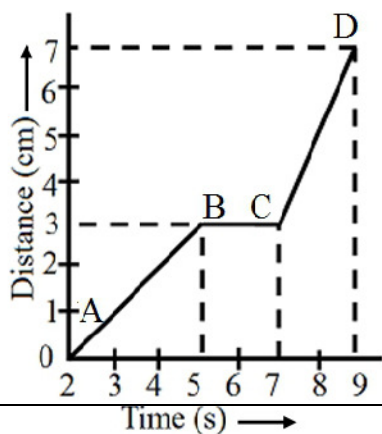

➤ **long question**   **[04]**

20.   A girl walks along a straight path to drop a letter in the letterbox and comes back to her initial position. Her displacement–time graph is shown in Plot a velocity–time graph for the same.
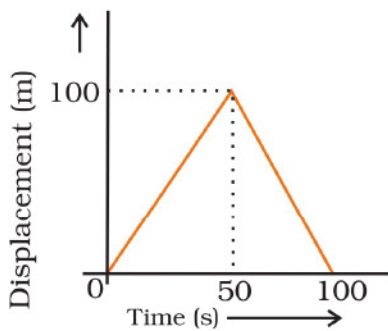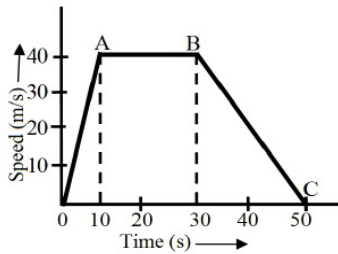

21.   The graph given alogside shows the positions of a body at different times. Calculate the speed of the body as it moves from:

iii. C to D.

22. Study the speed-time graph of a car given alongside and answer the following questions:

i. What type of motion is represented by OA?
ii. What type of motion is represented by AB?
iii. What type of motion is represented by BC?
iv. What is the acceleration of car from O to A?
v. What is the acceleration of car from A to B?
vi. What is the retardation of car from B to C?

23. What type of motion is represented by each one of the following graphs?
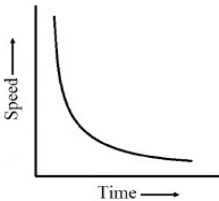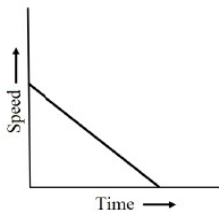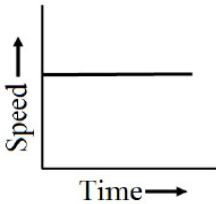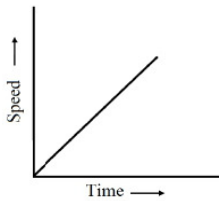
➤ case study   [01]

24. Instruction: The table given below shows distance (in cm) travelled by the bodies A, B and C. Read this data carefully and answer the questions which follow.

Distance (in cm) covered by different bodies:

Time	Body A	Body B	Body C
1st second	20	20	20
2nd second	20	36	60
3rd second	20	24	100
4th second	20	30	140
5th second	20	48	180

1. Which of the bodies is moving with:
   a. Constant speed?
   b. Constant acceleration?
2. Which of the bodies covers:
   a. Maximum distance in 3rd second?
   b. Minimum distance in 3rd second?
3. Which of the bodies is moving with non-uniform acceleration?

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MATHEMATICS

SECTION-A
(Question numbers 1 to 6 carry 1 mark each.)

1. The value of $\dfrac{5^0 + 7^0}{2^0}$ is :

   (a) 0   (b) 1   (c) 2   (d) –1

2. The value of $\sqrt{5} \times \sqrt{7} \times \sqrt{15} \times \sqrt{21}$ is :

   (a) 102   (b) 105   (c) 110   (d) 84

6. The value of $0.1\overline{53}$ in the form $\dfrac{p}{q}$, where p and q are co-primes and $q \neq 0$ is :

   (a) $\dfrac{76}{495}$ (b) $\dfrac{77}{945}$ (c) $\dfrac{87}{490}$ (d) $\dfrac{85}{496}$

4. The value of $\sqrt[4]{(64)^{-2}}$ is :

   (a) $\dfrac{1}{4}$ (b) $\dfrac{1}{16}$ (c) $\dfrac{2}{25}$ (d) $\dfrac{1}{8}$

5. If $a = c^z$, $b = a^x$ and $c = b^y$, then $xyz =$

   (a) 0   (b) –1   (c) 1   (d) xyz

6. **Assertion (A) :** $\sqrt{2}$, $\sqrt{3}$ are examples of irrational numbers.

   Reason (R) : An irrational number can be expressed in the form $\dfrac{p}{q}$

   (a) Both (A) and (R) are true and (R) is the correct explanation of (A)
   (b) Both (A) and (R) are true but (R) is not the correct explanation of (A)
   (c) (A) is true but (R) is false
   (d) (A) is false but (R) is true

SECTION-B
(Question numbers 7 to 9 carry 2 marks each.)

7. If $5^{2x-1} - 25^{x-1} = 2500$, find the value of x.

8. If $\dfrac{1}{x} = \dfrac{2^{74} + 2^{72}}{2^{72} + 2^{70}}$, then find the value of x.

9. Find the values of a and b, if $\dfrac{\sqrt{11} - \sqrt{7}}{\sqrt{11} + \sqrt{7}} = a - \sqrt{77}\, b$.

SECTION-C
(Question numbers 10 to 13 carry 3 marks each.)

10. Determine a and b, if $\dfrac{7+\sqrt{5}}{7-\sqrt{5}} - \dfrac{7-\sqrt{5}}{7+\sqrt{5}} = a + 7\sqrt{5}b$.

11. Represent $\sqrt{26}$ on the number line.

12. Prove : $\left(\dfrac{x^a}{x^b}\right)^{a+b} \times \left(\dfrac{x^b}{x^c}\right)^{b+c} \times \left(\dfrac{x^c}{x^a}\right)^{c+a} = 1$

13. If $x = 5 + 2\sqrt{6}$ and $y = \dfrac{1}{x}$, then find the value of $x^2 + y^2$.

SECTION-D
(Question numbers 14 to 16 carry 5 marks each.)

14. Rationalise the denominator $\dfrac{1}{\sqrt{5} + \sqrt{6} - \sqrt{2}}$.

15. Evaluate $\left\{\sqrt{7 + 2\sqrt{10}}\right\} + \left\{\sqrt{5 - 2\sqrt{6}}\right\}$

**16.** Represent $\sqrt{9.3}$ on the number line.

SECTION-E
(Question no. 17 is a Case Study Based Question. Each subpart carries 1 mark.)

17. Real numbers are combination of rational and irrational numbers. Rational numbers can be written in the form $\dfrac{a}{b}$, where a and b are integers and $b \neq 0$. Rational numbers are either terminating or non-terminating repeating. Irrational numbers are those numbers, which cannot be written in the form $\dfrac{a}{b}$. Irrational numbers are non-terminating non repeating.

Now answer the following :

The Real Number System

Real Numbers
...−2, −1.256, 0, 1, $\sqrt{2}$, π ....

Irrational Numbers
$\sqrt{2}, \sqrt{3}$, π, $\sqrt{11}$

Rational Numbers
...−1.5, −1, −0.5, 0, 0.5, 1, 1.5, ...

Integers
...−3, −2, 0, 1, 2, 3, ...

Whole Numbers
0, 1, 2, 3, 4, 5, 6, ...

Natural Numbers
1, 2, 3, 4, 5, 6, ...

   (i) Every rational number is called a _____.

   (ii) The product of two irrational numbers is _____.

   (iii) How many rational numbers between two irrational numbers?

   (iv) π is an _____ number.

   (v) The sum of a rational and an irrational number is _____.
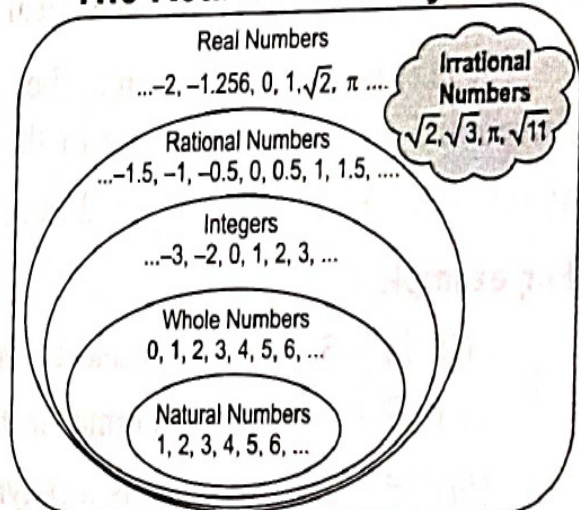
1. The coefficient of x^2 in $\dfrac{-x^2 + 3x + 5}{\pi}$ is :

   (a) $\dfrac{1}{\pi}$ (b) $\dfrac{-1}{\pi}$ (c) $\dfrac{2}{\pi}$ (d) $\dfrac{5}{\pi}$

2. If $x + y = 8$ and $xy = 6$, then the value of $x^3 + y^3$ is :

   (a) 168   (b) 372   (c) 268   (d) 368

3. A factor of the polynomial, $p(x) = x^4 + x^3 - 7x^2 - x + 6$ is :

   (a) $(x + 3)$ (b) $(x - 3)$ (c) $(x + 1)$ (d) $(x + 2)$

4. The zeroes of the polynomial, $p(x) = (x + 1)(x - 2)(x + 3)$ is :

   (a) 1, 2, 3   (b) $-1, 2, -3$ (c) $1, -2, 3$ (d) $-1, -2, -3$

5. If $p(x) = 4x^3 - 3x^2 + 2x - 4$, then the value of $\dfrac{p(2)}{p(0) \times p(1)}$ is :

   (a) 2   (b) 3   (c) 5   (d) 7

6. **Assertion (A) :** A polynomial in x expressed either in ascending powers of x or in descending powers of x is said to be in standard form.

   Reason (R) : A symbol which may be assigned different numerical values is known as a variable.

   (a) Both (A) and (R) are true and (R) is the correct explanation of (A)
   (b) Both (A) and (R) are true but (R) is not the correct explanation of (A)
   (c) (A) is true but (R) is false
   (d) (A) is false but (R) is true

7. Factorise :   (i) $12x^2 - 7x + 1$ (ii) $3x^2 - x - 4$

8. Factorise :   (i) $49a^2 + 70ab + 25b^2$ (ii) $\dfrac{25}{4}x^2 - \dfrac{y^2}{9}$

9. Factorise : $4x^2 + y^2 + z^2 - 4xy - 2yz + 4xz$

10. Verify : (i) $x^3 + y^3 = (x + y)(x^2 - xy + y^2)$ (ii) $x^3 - y^3 = (x - y)(x^2 + xy + y^2)$

11. If $x + y + z = 0$, show that $x^3 + y^3 + z^3 = 3xyz$

12. Verify that : $x^3 + y^3 + z^3 - 3xyz = \dfrac{1}{2}(x + y + z)[(x - y)^2 + (y - z)^2 + (z - x)^2]$

13. Factorise :

(i) $4x^2 + 9y^2 + 16z^2 + 12xy - 24yz - 16xz$ (ii) $2x^2 + y^2 + 8z^2 - 2\sqrt{2}\,xy + 4\sqrt{2}\,yz - 8xz$.

SECTION-D

(Question numbers 14 to 16 carry 5 marks each.)

14. Prove that : $(a + b + c)^3 - a^3 - b^3 - c^3 = 3(a + b)(b + c)(c + a)$

15. Simplify : $\dfrac{(x^2 - y^2)^3 + (y^2 - z^2)^3 + (z^2 - x^2)^3}{(x - y)^3 + (y - z)^3 + (z - x)^3}$

16. If a, b, c are all non-zero and $a + b + c = 0$, prove that : $\dfrac{a^2}{bc} + \dfrac{b^2}{ca} + \dfrac{c^2}{ab} = 3$

SECTION-E

(Question no. 17 is a Case Study Based Question. Each subpart carries 1 mark.)

17. Two friends Rashi and Pragya were given a polynomial by their maths teacher.

The polynomial was $P(x) = x^2 - 5x + 6$.
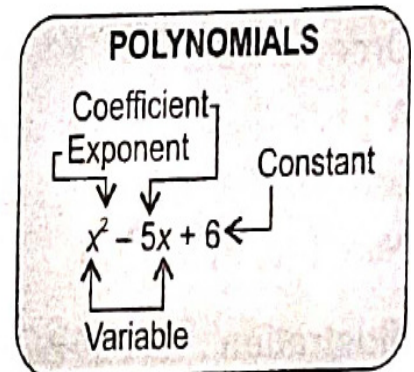
Answer the following questions.

(i) Find the given polynomial.

(ii) Find zeroes of this polynomial.

(iii) Find the value of the polynomial when $x = -1$ is :

(iv) Find the value of $P(3) + P(1)$.

(v) A quadratic polynomial can have a maximum of _____ zeros.

POLYNOMIALS

Coefficient
Exponent   Constant
$x^2 - 5x + 6$
Variable

SECTION-A

(Question numbers 1 to 6 carry 1 mark each.)

1. The ordinate of all points on the *x*-axis is :
   (a) 0   (b) 1   (c) −1   (d) 2

2. On which axis does the point (−7, 0) lie?
   (a) origin   (b) *x*-axis   (c) *y*-axis   (d) none of these

3. The perpendicular distance of (1, 5) from *x*-axis is :
   (a) 2 units   (b) 3 units   (c) 4 units   (d) 5 units

4. Where will you find all points with ordinate 0?
   (a) *x*-axis   (b) *y*-axis   (c) origin   (d) none of these

5. Without plotting the points indicate the quadrant in which they will lie, if ordinate is 5 and abscissa is −3.
   (a) I quadrant   (b) II quadrant   (c) III quadrant   (d) IV quadrant

6. **Assertion (A)** : The point O(0, 0) lies in quadrant I.

   Reason (R) : The point O(0, 0) lies on both the axis.
   (a) Both (A) and (R) are true and (R) is the correct explanation of (A)
   (b) Both (A) and (R) are true but (R) is not the correct explanation of (A)
   (c) (A) is true but (R) is false
   (d) (A) is false but (R) is true

SECTION-B

(Question numbers 7 to 9 carry 2 marks each.)

7. Without plotting the points indicate the quadrant in which they will lie, if.
   (*i*) Ordinate is −5 and abscissa is −3
   (*ii*) Ordinate is −4 and abscissa is 6
   (*iii*) abscissa is −4 and ordinate is −8

8. From the figure, answer the following:
   (*i*) Point in fourth quadrant.
   (*ii*) The abscissa of the point which has ordinate as −2.
   (*iii*) The ordinate of T.
   (*iv*) Coordinates of points on *y*-axis.
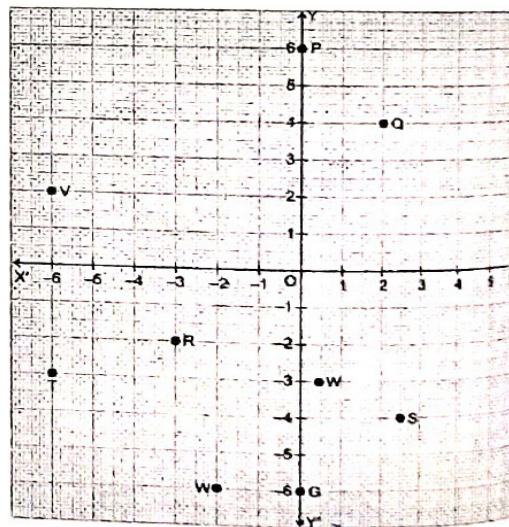
9. Find the perpendicular distance of the point (−2, −7) from *x* and *y*-axis.
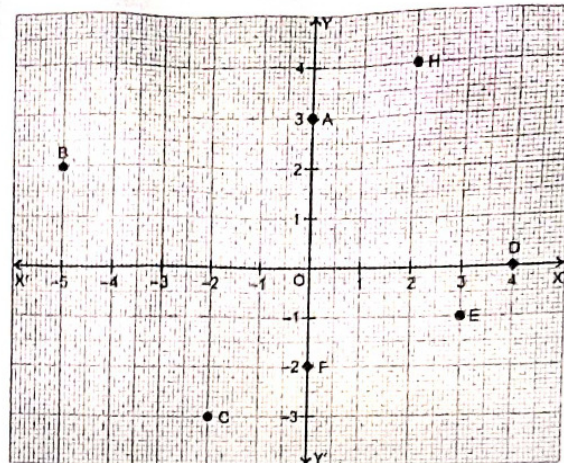
SECTION-C

(Question numbers 10 to 13 carry 3 marks each.)

10. Find the co-ordinates of the point:
    (*i*) Which lies on *x* and *y* axis both.

(ii) Whose ordinate is –4 and which lies on *y*-axis.

(iii) Whose abscissa is 5 and lies on *x*-axis.

11. From the figure, write the following:

   (i) Coordinates of B, C and E

   (ii) The coordinates of point A.

   (iii) The abscissa of the point H

   (iv) The ordinate of the point D

12. Write the answer of each of the following questions :

   (i) What is the name of horizontal and the vertical lines drawn to determine the position of any point in cartesian plane?

   (ii) What is the name of each part of the plane formed by these two lines?

   (iii) Write the name of the point where these two lines intersect.

13. In which quadrant or on which axis does each of the following points lie?

   A(–2, 4), B(7, –5), C(8, 0), D(5, 5), E(–2, –8), F(0, –9)

SECTION-D

(*Question numbers* 14 *to* 16 *carry* 4 *marks each.*)

14. Find the coordinates of the point whose :

   (i) abscissa is –1 and lies on x-axis

   (ii) abscissa is 4 and ordinate is –1

   (iii) abscissa equals the ordinate and whose distance from *y*-axis is 3 units in the positive direction of *x*-axis

15. In the figure, LM is a line parallel to the *y*-axis at a distance of 3 units.

   (i) What are the coordinates of the point P, R and Q?

   (ii) What is the difference between the abscissa of the points L and M ?
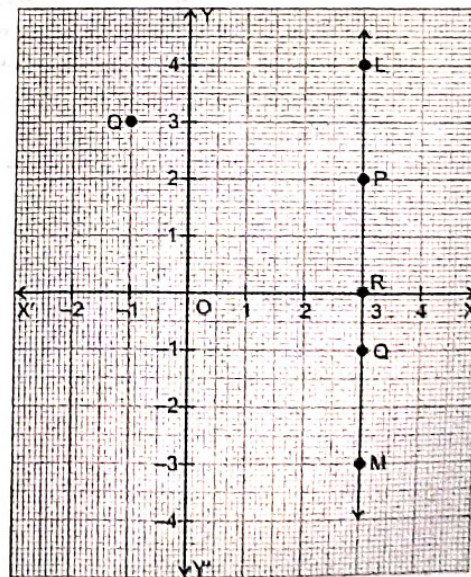
SECTION-A

(Question numbers 1 to 10 carry 1 mark each.)

1. Each equal side of an isosceles right triangle is x cm. Its area is :

   (a) $\frac{x^2}{4}$ cm^2 (b) $\frac{x^2}{2}$ cm^2 (c) $\frac{x^2}{3}$ cm^2 (d) x^2 cm^2

2. The area of an equilateral triangle of side 12 cm is :

   (a) $12\sqrt{3}$ cm^2 (b) $18\sqrt{3}$ cm^2 (c) $24\sqrt{3}$ cm^2 (d) $36\sqrt{3}$ cm^2

3. The length of each side of an equilateral triangle having an area $9\sqrt{3}$ cm^2 is :

   (a) 4 cm   (b) 5 cm   (c) 6 cm   (d) 8 cm

4. The area of an isosceles triangle having base 2 cm and length of its equal sides is 4 cm is :

   (a) $\sqrt{15}$ cm^2 (b) $\sqrt{18}$ cm^2 (c) $\sqrt{23}$ cm^2 (d) $\sqrt{27}$ cm^2

5. The edge of a triangular board are 6 cm, 8 cm and 10 cm. The cost of painting it at the rate of 9 paise per cm^2 is :

   (a) ₹ 1.08   (b) ₹ 2.16   (c) ₹ 3.08   (d) ₹ 2.96

6. **Assertion (A) :** The area of a triangle is 48 cm^2 and its base is 12 cm, then its altitude is 8 cm.

   Reason (R) : Altitude $= \dfrac{\text{Area of triangle} \times 2}{\text{Base}}$

   (a) Both (A) and (R) are true and (R) is the correct explanation of (A)

   (b) Both (A) and (R) are true but (R) is not the correct explanation of (A)

   (c) (A) is true but (R) is false

   (d) (A) is false but (R) is true

SECTION-B

(Question numbers 7 to 9 carry 2 marks each.)

7. A traffic signal board, indicating 'SCHOOL AHEAD', is an equilateral triangle with side 'a'. Find the area of the signal board, using Heron's formula. If its perimeter is 180 cm, what will be the area of the signal board?

8. The lengths of the sides of a triangle are 5 cm. 7 cm and 8 cm. Find the area of the triangle.

9. An isosceles triangle has perimeter 30 cm and each of the equal sides is 12 cm. Find the area of the triangle.

SECTION-C

(Question numbers 10 to 13 carry 3 marks each.)

10. The sides of a triangle are in the ratio 3 : 4 : 5. If the perimeter of the triangle is 84 cm, then find the area of the triangle.

11. The sides of a triangle are 35 cm, 54 cm, and 61 cm. Find the length of the longest altitude.

12. Check whether the following statement is true or false.
    In a triangle, the sides are given as 11 cm, 12 cm and 13 cm. The length of the altitude is 10.25 cm corresponding to the side having length 12 cm.

13. The ratio of the equal side to the base of an isosceles triangle is 3 : 2. If the perimeter of the triangle is 32 cm, find its area.

SECTION-D

(Question numbers 14 to 16 carry 5 marks each.)

14. The base of an isosceles triangle measures 24 cm and its area is 60 cm^2. Find its perimeter.

15. The sides of a triangle are x, $x + 1$, and $2x - 1$ and its area is $x\sqrt{10}$. Find the value of x.

16. The perimeter of an isosceles triangle is 32 cm. The ratio of the equal side to its base is 3 : 2. Find the area of the triangle.

SECTION-E

(Question no. 17 is a Case Study Based Question. Each subpart carries 1 mark.)

17. During Municipal Corporation Election in New Delhi, Government used triangular side walls of a flyover for advertisements. The sides of the walls are 122 m, 22 m and 120 m long. The advertisement yield an earning of ₹ 5000 per m^2 per year. Government hired one of its walls for 3 months.
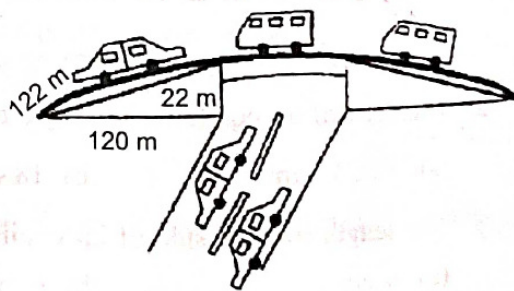
    Now, answer the following questions :
    (i) Find the semi perimeter of the triangular wall.
    (ii) Find the area of the triangular part.
    (iii) How much cost was paid by Government for 3 months?
    (iv) Which of the following is the correct formula for finding the area of a triangle using 'Heron's Formula'?
    (v) Heron's formula can be applied.

SOCIAL SCIENCE

Complete mapwork on the mapskill:-

History

Ch 1 French Revolution

On the mapskill Locate/label/identify;

*Bordeaux

*Nantes

 *Paris and

*Marseille

 Geography

Ch 1 India: size & location

●India - States with Capitals

 ● Tropic of Cancer, Standard Meridian (Location and Labelling)

● Neighbouring countries of India

Ch 2 physical features of India

● Mountain Ranges: The Karakoram,The Shivalik, The Aravali, Western & Eastern Ghats

● Mountain Peaks – K2, Kanchan Junga, Anai Mudi

● Plateau - Deccan Plateau, Chota Nagpur Plateau, Malwa Plateau

● Coastal Plains - Konkan, Malabar, Coromandel & Northern Circar (Location and Labelling)

Prepare a small model on any one of these topics:-

1. Different land forms of India

2. Types of forests in India

3 Disaster management

Write the answer of the following questions in your social science notebooks:-

In the questions given below, there are two Statements marked as Assertion (A) and Reason (R).

Read the Statements and Choose the correct option: Options are:

(A) Both (A) and (R) are true and (R) is the correct explanation of (A).

(B) Both (A) and (R) are true but (R) is not the correct explanation of (A).

(C) (A) is correct but (R) is wrong.

(D) (A) is wrong but (R) is correct.

Assertion (A): India Shares its land boundaries with Pakistan and Afghanistan in the northwest.

Reason (R): China, Tibet, Nepal and Bhutan in the South and Myanmar and Bangladesh in the West.

Assertion (A): India lies entirely in the Northern hemisphere.

Reason (R): The Tropic of Cancer (23030'N) divides the Country into almost two equal parts.

Assertion: The French Revolution had a significant impact on the world.

Reason: The French Revolution inspired people in other countries to demand democracy and equality.

Read the source given below and answer the questions that follow:

On the morning of 14 July 1789, the city of Paris was in a state of alarm. The king had commanded troops to move into the city. Rumours spread that he would soon order the army to open fire upon the citizens. Some 7,000 men and women gathered in front of the town hall and decided to form a peoples' militia. They broke into a number of government buildings in search of arms. Finally, a group of several hundred people marched towards the eastern part of the city and stormed the fortress-prison, the Bastille, where they hoped to find hoarded ammunition. In the armed fight that followed, the commander of the Bastille was killed and the prisoners released – though there were only seven of them. Yet the Bastille was hated by all because it stood for the despotic power of the king. The fortress was demolished and its stone fragments were sold in the markets to all those who wished to keep a souvenir of its destruction. The days that followed saw more rioting both in Paris and the countryside. Most people were protesting against the high price of bread. Much later, when historians looked back upon this time, they saw it as the beginning of a chain of events that ultimately led to the execution of the king in France, though most people at the time did not anticipate this outcome.

Answer the following MCQs by choosing the most appropriate option:

On 14th July, 1789 the people of the ____ estate attacked the Bastille prison and freed all the prisoners signalling the start of the _____.

first, civil war

fourth, Russian war

second, movement

third, revolution

Which of the following statement is incorrect?

The Bastille was the fortress-prison.

The Bastille stood for the democratic power of the king.

On the morning of 14 July 1789, the people of Paris stormed Bastille

All are correct

In the question given below, there are two statements marked as Assertion (A) and Reason (R).

Read the statements and chose the correct option:

Assertion (A): The people of France storm the Bastille.

Reason (R): They were hopeful to find King Louis XIV and commander of the Bastille there.

Both A and R are correct and R is the correct explanation of A.

Both A and R are correct but R is not the correct explanation of A.

A is correct but R is wrong.

Both A and R are wrong.

What was the immediate cause of rioting in Paris?

Atrocities by the commander

The high price of bread

The killing of women and children

All of these

In the question given below, there are two statements marked as Assertion (A) and Reason (R).

Read the statements and chose the correct option:

Assertion (A): Pakistan not considered a democratic country even after having elections

Reason (R): Despite elections to the national and provincial assemblies, the final powers rested with General Musharraf and military officers.

Both A and R are true and R is the correct explanation of A.

Both A and R are true but R is not the correct explanation of A.

A is correct but R is wrong.

A is wrong but R is correct.

The Constituent Assembly adopted the Constitution of India on

(a) 26 January 1950

(b) 26 November 1949

(c) 26 January 1949

(d) 15 August 1947

Apartheid in South Africa was discrimination on the basis of

(a) gender

(b) religion

(c) race

(d) economic status

The Indian Constitution came into effect on

(a) 26 January 1949

(b) 26 January 1950

(c) 26 January 1952

(d) 26 November 1950

The most abundant factor of production is

(a) labour   (b) land   (c) machinery   (d) all of the above In

'Operation Flood' is related to :

(a) control flood   (b) produce fish   (c) milk production (d) grain production

Consumption of chemical fertilisers is highest in which state of India?

(a) Punjab   (b) Haryana   (c) Rajasthan   (d) Himachal Pradesh

ARTIFICIAL INTELLIGENCE

❖ DREAM Smart Home Idea

Design your dream home. Write down the innovations that you would like to see in your future home. (In points only)

❖ There are a number of smart devices available in the market these days. Write a short note on your favourite smart device. Here are some pointers to guide you:

- Features of your favourite smart device
- Features that make it smart.
- Also paste a picture of the smart device.

❖ Recommended Activity: Job Ad Creating activity •

Students to create a job advertisement for a firm describing the nature of job available and the skill set required for it 10 years down the line. They need to figure out how AI is going to transform the nature of jobs and create the Ad accordingly.

Important instructions:

➢ Please use colourful loose sheets for making the assignment.
➢ The front page should be decorative and impressive containing the following information:
  Name, Class, Section, Roll no, Subject