BCM School, Pakhowal Road, Basant City, Ludhiana

Holidays Homework

2023

STD. IX

English

Science

Social Studies

Mathematics

हिंदी तथा व्याकरण

Artificial Intelligence
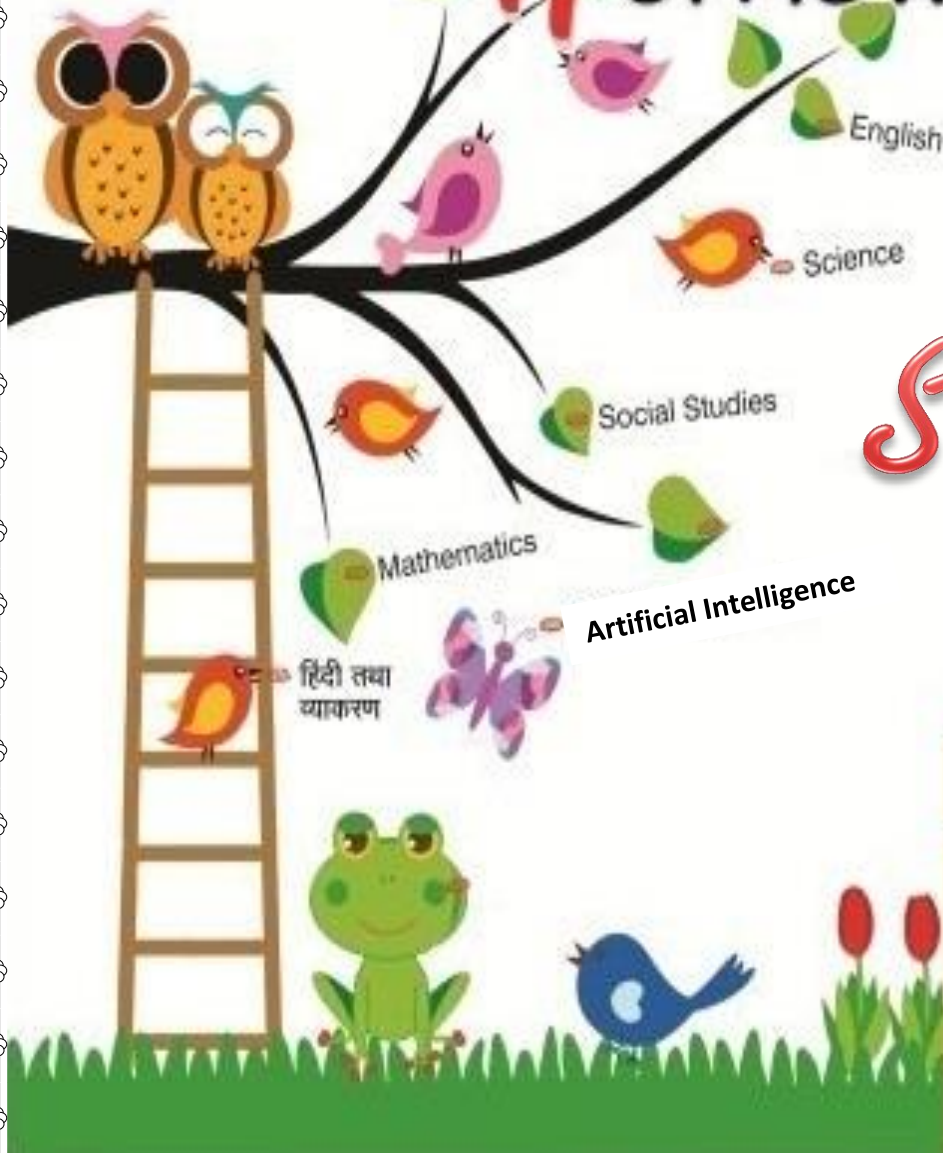
ENGLISH

A. Read 1 to 5 Unseen passages from BBC Compacta and solve them.
B. Write the following in about 150-200 words. (Based on Art Integrated Activity):
      BEEHIVE:-
      Prose: The Fun They Had – Descriptive Paragraph on Technology in Education can never substitute/replace Teacher by giving reference of your own Teacher.
      Poetry: The Road Not Taken – Draw Pictorial representation of the poem along with explanation.
      Prose: The Little Girl – Read the chapter and write a short story in your own words.
      Prose: The Sound of Music-Descriptive Paragraph on Different Style of Music.
      Poetry: Wind - Write a speech on 'The Wind is Both a Friend and a Foe'.
      Moments: The Lost Child - Write a diary entry stating your experience in a fair.
      Moments: 'The Adventures of Toto' – Descriptive Paragraph on 'Protection of Animal Rights' by mentioning any animal.
C. * Write a descriptive paragraph on 'Cultural Heritage of Odisha'.
   * Write a descriptive paragraph on 'Cultural Heritage of Punjab'.
          (Both on A4 size sheets)
D. Read Chapter no 3 to 5 of 'Beehive'.
E. Prepare a File Folder (Portfolio) of English and put all the activities (Point B, C&D) of English in it.

CHEMISTRY

1. Make a chart of atomic numbers and electronic configuration of.1 to 20 elements.
2. Find out atleast 30 extra questions of ch.2 write down in your notebook with their answers.
3. Complete Lab Manual.

PHYSICS

1. Learn chapter 8 Motion and write given assignment in fair notebook of physics.
2. Art integrated activity:
    Draw pictures depicting Newton's First Law, Newton's Second Law and Newton's Third Law on A4 sheets. (Students should use appropriate colours, sketches for drawing work, glitter sheets or relative materials for creativity.)

ASSIGNMENT AND NOTES

1. An object experiences a net zero external unbalanced force. Is it possible for the object to be travelling with a non-zero velocity? If yes, state the conditions that must be placed on the magnitude and direction of the velocity. If no, provide a reason.
Solution:
Yes. It is possible for the object to be travelling with non-zero velocity. When a nonzero unbalanced force acts on an object, its velocity changes. Here change may be velocity magnitude or velocity direction or both magnitude and direction. Therefore, when zero external unbalanced force acts on a body, its magnitude and direction of velocity must be constant.
2. When a carpet is beaten with a stick, dust comes out of it. Explain.
Solution:
When a carpet is beaten with a stick, carper comes to motion, but the dust particles in the carpet tend to remain at rest due to inertia. This appears like dust particles coming out of the carpet.
3. Why is it advised to tie any luggage kept on the roof of a bus with a rope?
Solution:
When bus accelerates from rest, suddenly bus moves forward, but the luggage on the roof of the bus tend to remain at rest due to inertia. Hence, they might fall off the roof if not tied with rope. Similarly, when the moving bus stops suddenly due to inertia, the luggage on the roof tend to continue to remain in motion. Thus, they might fall off the roof if not tied with rope.

4. A batsman hits a cricket ball which then rolls on a level ground. After covering a short distance, the ball comes to rest. The ball slows to a stop because

(A) the batsman did not hit the ball hard enough.

(B) velocity is proportional to the force exerted on the ball.

(C) there is a force on the ball opposing the motion.

(D) there is no unbalanced force on the ball, so the ball would want to come to rest.

Solution: (C)

When the ball rolls on the ground, it comes to rest after covering short distance on the ground. Here friction is acting on the object opposite to the direction of motion. Due to the friction ball slows down continuously and stops after covering a short distance.

5. A truck starts from rest and rolls down a hill with a constant acceleration. It travels a distance of 400 m in 20 s. Find its acceleration. Find the force acting on it if its mass is 7 tonnes (Hint: 1 tonne = 1000 kg).

Solution:

Given,

The mass of the truck, m = 7 tonnes = 7000 kg

The initial velocity of the truck, u = 0 ($\because$ the truck is starting from rest)

The distance covered by the truck, S = 400 m

Time taken, t = 20 s

Let the constant acceleration of the truck be= a

From equations of motion,

$S = ut + 1/2at^2$

$\Rightarrow 400 = 0 \times t + 1/2 \times a\, 400$

$\Rightarrow a = 2$ m s−2

$\therefore$ From Newton's second law of motion, the force acting on the truck, F = m × a

$\Rightarrow$ F = 7000 × 2 = 14000 N or 14 kN

$\therefore$ Acceleration the truck is 2 m s−2 and the force acting on the truck is 14000 N or 14 kN.

6. A stone of 1 kg is thrown with a velocity of 20 m s–1 across the frozen surface of a lake and comes to rest after travelling a distance of 50 m. What is the force of friction between the stone and the ice?

Solution:

Given,

The initial velocity of the stone, u = 20 m s−1

The final velocity of the stone, v = 0 ($\because$ stone is coming to rest after travelling 50 m)

Distance covered by the stone before coming to rest S = 50 m

Let the constant acceleration/retardation of the stone be a

From equations of motion,

$v2 - u2 = 2as$

$\Rightarrow 0^2 - 20^2 = 2 \times a \times 50$

$\Rightarrow a = -400/100$

$\Rightarrow a = -4$ m s−2

From Newton's second law of motion,

Force of friction acting on the stone F = m × a

$\Rightarrow$ F = 1 × (−4) = −4 N

Therefore, friction force acting between the stone and the ice is −4 N

7. A 8000 kg engine pulls a train of 5 wagons, each of 2000 kg, along a horizontal track. If the engine exerts a force of 40000 N and the track offers a friction force of 5000 N, then calculate: (a) the net accelerating force and (b) the acceleration of the train.

Solution:

Mass of the train m = 2000 × 5 = 10000 kg

Force exerted by the engine Fengine = 40000 N

Force of friction on the train, Ffriction = 5000 N

Let the acceleration of the train be =a

(a) The net force acting on the train

Fnet = force exerted by the engine − force of friction

⇒ Fnet = 40000 − 5000 = 35000 N

(b) From Newton's second law of motion, Fnet = m × a

⇒ 35000 = 18000 × a

⇒ a =35000

10000 = 3.5 m s−2

Therefore, the acceleration of the train is 3.5 m s−2 and the net accelerating force on the train is 35000 N.

8. An automobile vehicle has a mass of 1500 kg. What must be the force between the vehicle and road if the vehicle is to be stopped with a negative acceleration of 1.7 m s–2?

Solution:

Given, the mass of the automobile m = 1500 kg

Negative acceleration or retardation of the automobile a = −1.7 m s−2

From Newton's second law of motion, F = m × a

⇒ F = 1500 × (−1.7) = −2550 N

Therefore, the retarding force required between the road and the automobile is 2550 N.

9. What is the momentum of an object of mass m, moving with a velocity v?

(A) (mv)^2

(B) mv^2

(C) 1/2mv^2

(D) mv

Solution: (D)

The momentum of an object of mass m moving with velocity v is defined as, P = m × v

10. Using a horizontal force of 200 N, we intend to move a wooden cabinet across a floor at a constant velocity. What is the friction force that will be exerted on the cabinet?

Solution:

Given, The horizontal force applied, F applied = 200 N

Let the friction force required be F friction

As the wooden cabin is to move with constant velocity, the net force acting on it is zero.

⇒ F applied + F friction = 0

⇒ F friction = − F applied = −200 N

∴ Friction force exerted on the cabin is −200 N

11. Two objects, each of mass 1.5 kg, are moving in the same straight line but in opposite directions. The velocity of each object is 2.5 m s-1 before the collision during which they stick together. What will be the velocity of the combined object after collision?

Solution:

Given

Masses of the two objects, m1 = m2 = 1.5 kg

The velocity of the first object v1 = 2.5 m s−1

The velocity of the second object v2 = −2.5 m s−1 (∵ both the objects are moving in the opposite direction)

Let the velocity of the combined object after the collision be v

From the law of conservation of linear momentum,

The linear momentum before collision = The linear momentum after the collision

$m1 \times v1 + m2 \times v2 = m1 \times v + m2 \times v$

$\Rightarrow v = m1 \times v1 + m2 \times v2 \,/\, m1 + m2$

$\Rightarrow v = 1.5 \times 2.5 - 1.5 \times 2.5$

$1.5 + 1.5 = 0$

∴ the velocity of the combined object after the collision is zero.

12. According to the third law of motion when we push on an object, the object pushes back on us with an equal and opposite force. If the object is a massive truck parked along the roadside, it will probably not move. A student justifies this by answering that the two opposite and equal forces cancel each other. Comment on this logic and explain why the truck does not move.

Solution:

According to the third law of motion when we push an object, the object pushes us back with an equal and opposite force. These two forces are called as actionreaction pair. Action and reaction forces never act on the same object. Hence, they never cancel each other. When we push a massive truck parked along the roadside, it will probably not move because applied force might not be strong enough to overcome the friction between the truck and the road. The justification given by the student is wrong.

13. A hockey ball of mass 200 g travelling at 10 m s–1 is struck by a hockey stick so as to return it along its original path with a velocity at 5 m s–1. Calculate the magnitude of change of momentum occurred in the motion of the hockey ball by the force applied by the hockey stick.

Solution:

Given

The mass of the hockey ball, m = 200 g = 0.2 kg

The initial velocity of the hockey ball, u = 10 m s−1

The initial momentum of the hockey ball Pi = 0.2 × 10 = 2 kg m s−1

The final velocity of the hockey ball, v = −5 m s−1

Final momentum of the hockey ball Pf = 0.2 × (−5) = −1 kg m s−1

Change in the momentum ΔP = Pf − Pi = −1 − 2 = −3 kg m s−1

∴ the magnitude of change in momentum is 3 kg m s−1

14. A bullet of mass 10 g travelling horizontally with a velocity of 150 m s–1 strikes a stationary wooden block and comes to rest in 0.03 s. Calculate the distance of penetration of the bullet into the block. Also, calculate the magnitude of the force exerted by the wooden block on the bullet.

Solution:

Given

The mass of the bullet m = 10 g = 0.01 kg

The initial velocity of the bullet u = 150 m s−1

The final velocity of the bullet v = 0

Time taken for the bullet to come to rest t = 0.03 s

Assuming the wooden block offers constant retardation during the penetration.

Let S be the distance the bullet covered before it comes to rest and a be the acceleration of it.

From the equation of motion,

$v = u + at$

$\Rightarrow a = v - u/t$

$\Rightarrow a = 0 - 150/0.03 = -5000$ m s−2

And the retardation force exerted by the wooden block F = ma

$\Rightarrow F = 0.01 \times (-5000) = -50$ N

Again, from equations of motion,

$V^2 - u^2 = 2aS$

$\Rightarrow S = v^2 - u^2/2a$

$\Rightarrow S = 0 - 150^2/2(-5000) = 2.25$ m

Hence the magnitude of the force exerted by the wooden block is 50 N and the distance of penetration is 2.25 m

15. An object of mass 1 kg travelling in a straight line with a velocity of 10 m s–1 collides with, and sticks to, a stationary wooden block of mass 5 kg. Then they both move off together in the same straight line. Calculate the total momentum just before the impact and just after the impact. Also, calculate the velocity of the combined object.

Solution:

Given,

The mass of the object m = 1 Kg

The initial velocity of the object u = 10 m s−1

Mass of the wooden block M = 5 kg

The initial velocity of the wooden block is 0

Total momentum before impact, Pi = m × u + M × 0 = 1 × 10 = 10 kg m s−1

Let the final common velocity be v

From the principle of conservation of the linear momentum,

The linear momentum before the impact = the linear momentum after the impact

∴Total final momentum after impact Pf = 10 kg m s−1

Also, from the principle of conservation of the linear momentum,

m × u + M × 0 = (m + M) × v

$\Rightarrow v =$

m × u

m + M = 1 × 10

1 + 5 = 1.67 m s−1

= (1 + 5) × 1.67 = 10 kg m s−1

Hence linear momentum before and after the impact is 10 kg m s−1 and the velocity of the combines object is 1.67 m s−1

16. An object of mass 100 kg is accelerated uniformly from a velocity of 5 m s–1 to 8 m s–1 in 6 s. Calculate the initial and final momentum of the object. Also, find the magnitude of the force exerted on the object.

Solution:

Given,

The mass of the object m = 100 kg

The initial velocity of the object u = 5 m s−1

Initial momentum Pi = m × u = 100 × 5 = 500 kg m s−1

The final velocity of the object v = 8 m s−1

Final momentum Pf = m × v = 100 × 8 = 800 kg m s−1

Time taken t = 6 s

From Newton's second law of motion, F = ΔP/Δt = Pf−Pi/t

F = 800−500/6

$\Rightarrow F = 50$ N

∴ The initial and final momenta of the object are 500 kg m s−1 and 800 kg m s−1 respectively and the magnitude of the force exerted is 50 N

BIOLOGY

1. Prepare a project on natural resources for internal assessment along with biogeochemical cycles (diagram) (NITROGEN CYCLE, CARBON CYCLE, OXYGEN CYCLE)
2. Read the chapter tissue and find 20 questions and write in your notebook
3. Draw following diagrams on scrapbook
    a. Plant cell
    b. Animal cell
    c. Xylem
    d. Phloem

SOCIAL SCIENCE

❖ **ASSIGNMENT**: Physical features of India
   Art Integrated Activities:
   a) Compare physical forms of Odisha and Punjab (R. No.: 1-15)
   b) River System (R. No.: 16-30)
   c) Climate (R. No.: 31-45)
❖ **MAP WORK:**
   Locate and label the following items on the Indian Political map
      a. Geography: Ch- 1 and 2

      b. History: Ch- 1
❖ Read (covered) chapters thoroughly, test will be conducted in the month of July after vacation.
❖ **PROJECT WORK**:
   "Do You Miss the days when homework was just coloring"
      ✶ Write main feature of New Parliament on A3 size sheet. (R. No. : 1-10)
      ✶ Guiding values of Indian Constitution (R. No.: 11-25)
      ✶ Democratic Rights (6) (R .No.: 26-31)
      ✶ Logo of G-20 on A4 size sheet(R. No.: 32 onwards)
         (Decorate it carefully)

Assignment

Ch: Physical Features of India

1. The Northern Plains has been formed by the interplay of three major river systems, namely?

2. Name the western and the eastern edges of the Deccan Plateau.

3. The part lying between Teesta and Dihang rivers is known as?

4. What are barchans?

5. Which is the highest peak in India?

6. Name the valleys lying between Lesser Himalayas and the shiwaliks?

7. What do we mean by the term 'Bhangar'?

8. Which two hills are in the southeast of the Eastern Ghats?

9. What is the name of the part of the Himalayas lying between the Kali and the Teesta rivers?

10. Name the Indian state where Kanchenjunga is located?

11. What do you mean by the word 'Doab'?

12. Which river drains the Chotanagpur Plateau?

13. What do you understand by 'duns'?

14. What is the Peninsular Plateau composed of?

15. How long and wide are the Himalayas?

16. Why are the Himalayas called as young mountains?

17. Name the major physical divisions of India.

18. Which river drains the Chotanagpur Plateau?

19. Which range of the Himalayas has hill stations?

20. Mention a characteristic feature of Himadri.

21. Which part of the Himalayas is known as Purvachal?

22. Name two states of India where highest peaks of Himalayas are located.

23. What is the average height of the Shiwaliks?

24. What is Khadar?

25. What is the Terai Zone?

HINDI

1. तीन औपचारिक और तीन अनौपचारिक पत्र लिखें ।
2. कोई पाँच लघु कथाएँ लिखें ।
3. पांच अलग-अलग विषयों पर संवाद लेखन करें ।
4. अपना portfolio बनाएं

     पोर्टफोलियो -

     नाम

     उम्र

     जन्म तिथि

     माता का नाम

     पिता का नाम

     रुचियाँ

     उपलब्धियां (achievements)

5. दो ओडिशा के और दो पंजाब के प्रसिद्ध संतों के जीवन पर आधारित प्रोजेक्ट बनाएं ।
6. Assignment हल करें

अर्थ के आधार पर वाक्य भेद पर आधारित कुछ बहुविकल्पीय प्रश्न

प्रश्न 1 - 'क्या मेरा भाई आपसे मिला ?'इस वाक्य में अर्थ के आधार पर वाक्य का कौन सा वाक्य भेद है ?

(i) विधान वाचक वाक्य

(ii) संदेह वाचक वाक्य

(iii) प्रश्न वाचक वाक्य

(iv) आज्ञा वाचक वाक्य

प्रश्न 2 - 'वह बहुत ज़ोर से हँस रहा है। 'इस वाक्य को 'विस्मय वाचक 'वाक्य में बदल कर लिखिए -

(i) अरे ! वह बहुत ज़ोर से हँस रहा है।

(ii) वह बहुत ज़ोर से क्यों हँस रहा है।

(iii) वह बहुत ज़ोर से नहीं हँस रहा है।

(iv) अरे वह बहुत ज़ोर से हँस ! रहा है।

प्रश्न 3 - 'राधा गृहणी है। 'इस वाक्य में उद्देश्य और विधेय छाँट कर लिखिए -

(i) उद्देश्य - गृहणी है ,विधेय - राधा

(ii) उद्देश्य - राधा ,विधेय - गृहणी है

(iii) उद्देश्य - है ,विधेय - राधा

(iv) उद्देश्य - गृहणी ,विधेय - है

प्रश्न 4 - 'अभय डॉक्टर है। 'इस वाक्य को निषेध वाचक वाक्य में कैसे लिखा जाएगा -

(i) क्या अभय डॉक्टर है।

(ii) अरे ! अभय डॉक्टर है।

(iii) अभय डॉक्टर नहीं है।

(iv) अभय डॉक्टर क्यों है।

प्रश्न 5 - 'मेरा पत्र पिता जी को मिला। 'इस वाक्य को प्रश्न वाचक वाक्य में बदलिए -

(i) क्या मेरा पत्र पिता जी को मिला ?

(ii) शायद मेरा पत्र पिता जी को मिला।

(iii) अरे ! मेरा पत्र पिता जी को मिला।

(iv) मेरा पत्र पिता जी को नहीं मिला।

प्रश्न 6 - 'मुझे आज बाहर घूमने का मन हो रहा है। 'यह वाक्य किस प्रकार का वाक्य है -

(i) आज्ञा वाचक वाक्य

(ii) संकेत वाचक वाक्य

(iii) इच्छा वाचक वाक्य

(iv) विस्मयादिबोधक वाक्य

प्रश्न 7 - 'जिन वाक्यों में संदेह / संभावना का बोध होता है 'वहाँ अर्थ की दृष्टि से कौन सा वाक्य भेद होता है -

(i) संदेह वाचक वाक्य

(ii) संकेत वाचक वाक्य

(iii) इच्छा वाचक वाक्य

(iv) विस्मयादिबोधक वाक्य

प्रश्न 8 - 'रमा पत्र लिख रही है। 'इस वाक्य में अर्थ के आधार पर वाक्य का कौन सा वाक्य भेद है ?

(i) विधान वाचक वाक्य

(ii) संदेह वाचक वाक्य

(iii) प्रश्न वाचक वाक्य

(iv) आज्ञा वाचक वाक्य

प्रश्न 9 - 'बहुत सुन्दर दृश्य है। 'इस वाक्य को 'विस्मय वाचक 'वाक्य में बदल कर लिखिए -

(i) शायद बहुत सुन्दर दृश्य है।

(ii) क्या सुन्दर दृश्य है।

(iii) वाह ! कितना सुन्दर दृश्य है।

(iv) बहुत सुन्दर दृश्य नहीं है।

प्रश्न 10 - 'मजदूरों ने काम कर लिया। 'इस वाक्य में उद्देश्य और विधेय छाँट कर लिखिए -

(i) उद्देश्य - काम कर लिया , विधेय - मजदूरों ने

(ii) उद्देश्य - मजदूरों ने , विधेय - काम कर लिया

(iii) उद्देश्य - मजदूरों ने , विधेय - काम

(iv) उद्देश्य - लिया, विधेय - मजदूरों ने

प्रश्न 11 - 'तुम कितने अच्छे लग रहे हो। 'इस वाक्य को विस्मयादि वाचक वाक्य में कैसे लिखा जाएगा -

(i) तुम अच्छे नहीं लग रहे हो।

(ii) तुम शायद अच्छे लग रहे हो।

(iii) अरे ! तुम कितने अच्छे लग रहे हो।

(iv) तुम कितने अच्छे क्यों लग रहे हो।

प्रश्न 12 - 'तुम अच्छे अंक से पास हो गए। 'इस वाक्य को प्रश्न वाचक वाक्य में बदलिए -

(i) क्या तुम अच्छे अंक से पास हो गए।

(ii) क्या तुम अच्छे अंक से पास हो गए ?

(iii) अरे ! तुम अच्छे अंक से पास हो गए।

(iv) तुम अच्छे अंक से पास नहीं हुए।

प्रश्न 13 - 'अभी तुम बाहर जाओ। 'यह वाक्य किस प्रकार का वाक्य है -

(i) आज्ञा वाचक वाक्य

(ii) संकेत वाचक वाक्य

(iii) इच्छा वाचक वाक्य

(iv) विस्मयादिबोधक वाक्य

प्रश्न 14 - 'जिन वाक्यों में किसी काम के न होने या न करने का बोध हो 'वहाँ अर्थ की दृष्टि से कौन सा वाक्य भेद होता है -

(i) संदेह वाचक वाक्य

(ii) संकेत वाचक वाक्य

(iii) इच्छा वाचक वाक्य

(iv) निषेधात्मक वाक्य

प्रश्न 15 - 'मुझे वह पुस्तक उठा कर दो। 'इस वाक्य में अर्थ के आधार पर वाक्य का कौन सा वाक्य भेद है ?

(i) विधान वाचक वाक्य

(ii) संदेह वाचक वाक्य

(iii) प्रश्न वाचक वाक्य

(iv) आज्ञा वाचक वाक्य

प्रश्न 16 - 'क्या आप उसे जानते हैं ?'इस वाक्य को 'विधान वाचक 'वाक्य में बदल कर लिखिए -

(i) आप उसे जानते हैं।

(ii) आप उसे कैसे जानते हैं ?

(iii) शायद आप उसे जानते हैं।

(iv) आप उसे नहीं जानते हैं।

प्रश्न 17 - 'गंगाधर जी का हिंदी भाषा पर पूर्ण अधिकार है। 'इस वाक्य में उद्देश्य और विधेय छाँट कर लिखिए -

(i) उद्देश्य - गंगाधर जी का , विधेय - हिंदी भाषा पर पूर्ण अधिकार है

(ii) उद्देश्य - हिंदी भाषा पर पूर्ण अधिकार है , विधेय - गंगाधर जी का

(iii) उद्देश्य - हिंदी भाषा पर , विधेय - गंगाधर जी का

(iv) उद्देश्य - गंगाधर जी का , विधेय - पूर्ण अधिकार है

प्रश्न 18 - 'अरे ! सूर्य गर्मी दे रहा है। 'इस वाक्य को विधान वाचक वाक्य में कैसे लिखा जाएगा -

(i) क्या सूर्य गर्मी दे रहा है।

(ii) अरे ! सूर्य गर्मी नहीं दे रहा है।

(iii) सूर्य गर्मी देता है।

(iv) सूर्य गर्मी नहीं दे रहा है।।

प्रश्न 19 - 'तुम्हें कुछ भी नहीं आता। 'इस वाक्य को प्रश्न वाचक वाक्य में बदलिए -

(i) क्या तुम्हें कुछ भी नहीं आता ?

(ii) शायद तुम्हें कुछ भी नहीं आता।

(iii) अरे ! तुम्हें कुछ भी नहीं आता।

(iv) आह ! तुम्हें कुछ भी नहीं आता।

प्रश्न 20 - 'मन से लगातार कोशिश करो ताकि कभी नहीं हारो। 'यह वाक्य किस प्रकार का वाक्य है -

(i) आज्ञा वाचक वाक्य

(ii) संकेत वाचक वाक्य

(iii) इच्छा वाचक वाक्य

(iv) विस्मयादिबोधक वाक्य

PUNJABI

1.ਆਪਣੀ ਪਾਠ ਪੁਸਤਕ ਵਿੱਚ ਦਰਜ ਇਕਾਂਗੀ ਸਿਰਜਣਾ ਨੂੰ ਧਿਆਨਪੂਰਵਕ ਪੜ੍ਹੋ ਤੇ ਉਸ ਵਿਚੋਂ ਸਮਾਜ ਨੂੰ ਜੋ ਸੇਧ ਦੇਣ ਲਈ ਜੋ ਸਿੱਖਿਆ ਮਿਲਦੀ ਹੈ ਉਸ ਬਾਰੇ ਲਿਖੋ ।

2.ਆਪਣੀ ਵਿਆਕਰਨ ਪੁਸਤਕ ਵਿਚੋਂ ੲ ਤੇ ਸ ਨਾਲ ਸਬੰਧਿਤ ਦਸ ਦਸ ਮੁਹਾਵਰੇ ਲਿਖੋ ।

3. ਆਪਣੇ ਸਕੂਲ ਮੈਗਜ਼ੀਨ ਲਈ 'ਮਿਹਨਤ' ਵਿਸ਼ੇ ਨੂੰ ਦਰਸਾਉਂਦੀ ਕਹਾਣੀ ਲਿਖੋ।

4. ਆਪਣੀ ਵਿਆਕਰਨ ਪੁਸਤਕ ਵਿਚੋਂ ਵਿਰੋਧੀ ਸ਼ਬਦ, ਲਿੰਗ ਬਦਲੋ, ਸ਼ਬਦ ਸ਼੍ਰੇਪੀ ਤੇ ਵਿਸਮਿਕ ਪੜ੍ਹੋ ਤੇ ਯਾਦ ਕਰੋ।

5. ਕੋਈ ਇੱਕ ਇੱਕ ਨਿੱਜੀ, ਦਫਤਰੀ ਤੇ ਬਿਨੈ ਪੱਤਰ ਲਿਖੋ

6. ਹੇਠ ਲਿਖੇ ਵਿਸ਼ਿਆਂ ਤੇ ਲੇਖ ਲਿਖੋ ।

- ਇੱਕ ਚੁੱਪ ਸੌ ਸੁੱਖ ।
- ਸਮਾਜਿਕ ਕੁਰੀਤੀਆਂ
- ਨਕਲ ਦੀ ਬੁਰਾਈ।

7. ਹੇਠ ਲਿਖੇ ਵਿਸ਼ੇ ਤੇ ਪ੍ਰੋਜੈਕਟ ਬਣਾਓ-:

   ਪੰਜਾਬ ਤੇ ਉੜੀਸਾ ਦੇ ਖਾਣ-ਪੀਣ ਤੇ ਹਾਰ-ਸ਼ਿੰਗਾਰ ਨੂੰ ਦਰਸਾਉਂਦਾ ਕੋਲਾਜ਼ ਬਣਾਓ ।

ARTIFICIAL INTELLIGENCE

1. How AI is used in home automation. Explain with examples.

2. Explain three domains of AI.

3. Give three examples each where DATA, CV, NLP domains are used.

MATHEMATICS

✳ **Solve the given assignment in your assignment notebook.**
✳ **Revise the syllabus covered in the month of April and May.**
✳ **Do the following activities in your practical notebook.**

Activities

1. To make a square root spiral by using paper folding.
2. To verify the algebraic identity $(a+b)^3=a^3+b^3+3a^2b+3ab^2$ geometrically by using sets of unit cubes.
3. To obtain the mirror image of a given geometrical figure with respect to x-axis and y-axis.
4. To obtain a linear equation and draw a graph which represents the linear equation (ax+by+c=0)
5. To verify that in a triangle, the line joining the mid points of any two sides is parallel to the third side and half of it by paper folding and pasting. (Mid-Point Theorem)
6. To verify that the angle subtended by an arc at the centre of circle is double the angle subtended at any point on the remaining part of the circle, experimentally.
7. To show that the angles subtended the chord of a circle in the same segment are equal, experimentally.
8. To verify that angle in a semicircle is a right angle in a major segment is acute; angle in a minor segment is obtuse by paper folding.
9. To show graphically the data collected by the students and to find their mean, median and mode.
   • **Make any one activity (of your choice) as an art integrated from above 9 activities on A4 sheet separately.**

Assignment

1. Express the following decimals in the form $\frac{p}{q}$.

   (a) $0.3\overline{2}$ (b) $0.12\overline{3}$

2. Insert 10 rational numbers between $\frac{-3}{11}$ and $\frac{8}{11}$

3. Represent $\sqrt{6}, \sqrt{7}, \sqrt{8}$ on the number line.

4. Evaluate:

   (a) $\left(\frac{2}{11}\right)^4 \times \left(\frac{11}{3}\right)^2 \times \left(\frac{3}{2}\right)^3$

   (b) $\left(\frac{64}{25}\right)^{\frac{-3}{2}}$

5. Simplify: $(25)^{\frac{-1}{3}} \times \sqrt[3]{16}$

6. If both 'a' and 'b' are rational numbers, find the values of a and b.

   (a) $\frac{3+\sqrt{7}}{3-\sqrt{7}} = a + b\sqrt{7}$

   (b) $\frac{5+\sqrt{3}}{7-4\sqrt{3}} = 47a + \sqrt{3}b$

7. If $x = 2 + \sqrt{3}$, find the value of $x^2 + \frac{1}{x^2}$

8. Factorize: $p^6 - 512q^6$

9. Find the remainder when $p(y) = y^3 + y^2 + 2y + 3$ is divided by $y + 2$.

10. Find the value of a, if $x - a$ is a factor of $x^3 - a^2x + x + 2$.

11. Find the values of a and b so that the polynomial $x^3 - ax^2 - 13x + b$ has $(x - 1)$ and $(x + 3)$ as factors.

12. Factorise: $x^3 + 6x^2 + 11x + 6$

13. Factorise: $x^3 + 7x^2 + 7x + 15$

14. Factorise: $x^3 + 5x^2 + 3x - 9$

15. Factorise: $2x^3 + 3x^2 + 2x + 1$

16. Evaluate: 185 x 185 – 115 x 115

17. Write in expanded form: $(9x + 2y + z)^2$

18. Write in expanded form: $(2x + 3y)^3$

19. In figure, ABCD is a square with each side 6 cm, O is the mid-point of AB. Find the coordinate of A, B, C, D.
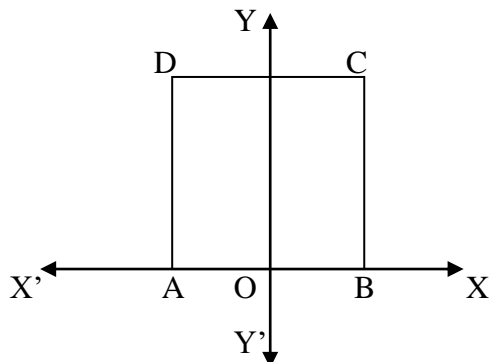
20. Which of the following points lies on X-axis? Which on Y-axis?

A(0,2), B(5,6), C(-3,0), D(0,-3), E(0,4), F(6,0), G(3,0).

21. In which quadrant do the following points lie?

   (a) (2,-1)   (b) (-1,7)   (c) (-2,-3)   (d) (4,5)

22. Plot the points A(0,3), B(5,3), C(4,0) and D(-1,0) on the graph paper. Identity the figure ABCD and find whether the point (2,2) lies inside the figure or not?

23. Plot the points A(-3,3), B(3,-3), C(3,3), D(-3,3)in the Cartesian plane. Also, find the length of line segment AB.

24. Plot the points P(2,0), Q(5,0) and S(2,3). Find the coordinates of the points R such that PQRS is square.

25. Three vertices of rectangle are (-1,1), (5,1) and (5,3). Plot these points and find the coordinates of the fourth vertex.