ST. VIVEKANAND LOTUS VALEY PUBLIC SCHOOL
CLASS –X
SESSION 2024-25

SUMMER HOLIDAYS

HOME WORK

English
Assignment sheet –1

Q1. Thinking lencho to be extremely simple and innocent, justify his reaction to the postmaster's letter.

Q2. Would you agree that "depth of oppression" create "heights of characters"?How does Mandela illustrate this?

Q3. Which two obligations, according to Nelson Mandela, does every man have in life ?How could a man not fulfill these obligations in a country like South Africa?

Q4. How did the seagull family help th believed that paper has more patience than people she could confide more in her diary than in people why did she feel so was she free from bais and stereotypes?

Q5. 'TheDiary of Anne Frank' is a work of an insightful mind of a young girl. Explain.

Q6. 'God has those who help themselves' Do you agree? Discuss with reference to the lesson 'Black Aeroplane'

Q7. From beginning to the end of the lesson 'Black Aeroplane' is a mystery. How?

Q8. Compare and contrast Tricky in the beginning and in the end of the story "ATriumph of Surgery"

Q9. The theme of the story'A Triumph of Surgery'. Who was Anil ?How did he treat Hari Singh and how did it influence Hari's life?

Q10. We need intelligence more than physical strength in a difficult situation. How is it proved from the story "The Midnight Visitor"?

Q11. Who do you think is the real culprit and the story "A Question of Trust".

Q12. Why did Horace Danby get angry when anyone talked about 'Honor among thieves'? what does it mean in the context of the story " A Question of Trust"?

Q13. What makes you think that Griffin was a lawless person?

Q14. "The measure of a man is what he does with his power ."In the light of this statement, comment on the character of Griffin.

Q15. What impression do you form of all the Bell as a secret agent after reading the story 'The Midnight visitor'.?

Q16. Write Message and theme of the poem" Fire and Ice" and "Dust of Snow".

Q17. Write Message and Theme of the poem,"How to Tell Wild Animals" and "TheBall Poem".

Write and learn these Question Answer in your fair note book.
Learn Textual Question Answer of (First Flight & Footprints without feet) thoroughly.
Thorough reading of Chapters is compulsory for all.

Assignment – 2
1. (Reading)
 Practice of five reading passages from BBC.
2. (Writing)
 Practice of editorial letter and complaint letter from BBC.
Project work
Prepare a project on Nelson Mandela
     OR
Robert Frost
Prepare a model and chart on any topic of your syllabus including poetry, prose and language.(It's mandatory for all)

HINDI

प्रश्न (1) निम्नलिखित विषयों पर 80 से 100 शब्दों में अनुच्छेद लिखिए-
(क)   ग्लोबल वार्मिंग मनुष्य के लिए खतरा
(ख)   नर हो न निराश करो मन को
(ग)   समाचार पत्र ज्ञान और मनोरंजन का साधन
(घ)   मधुर वाणी का महत्व
(ड़)   महान संस्कृति और सभ्यता संपन्न भारत

प्रश्न (2) निम्नलिखित विषयों पर औपचारिक पत्र लिखिए
(क)   दैनिक समाचार पत्र के संपादक को अपनी कविता प्रकाशित करवाने का अनुरोध करते हुए पत्र लिखिए।
(ख)   अपने विद्यालय की प्रधानाचार्या को प्रार्थना पत्र लिखिए जिसमें कंप्यूटर का महत्व बताते हुए कंप्यूटर शिक्षक की व्यवस्था करवाने का अनुरोध किया गया हो।
(ग)   कल- कारखानों के कारण आपके नगर में बढ़ते हुए प्रदूषण तथा उसके खतरों को देखते हुए किसी दैनिक समाचार पत्र के संपादक को पत्र लिखिए।
(घ)   अपने विद्यालय की प्रधानाचार्या जी को पत्र लिखकर विद्यालय में सांस्कृतिक कार्यक्रम आयोजित करवाने हेतु प्रार्थना कीजिए।

प्रश्न(3) निम्नलिखित विषयों के लिए एक सुंदर एवं आकर्षक विज्ञापन तैयार कीजिए-
(क)   आपके भाई ने वातानुकूलित यंत्र बनाने की एक कंपनी खोली है। उसके प्रचार- प्रसार के लिए 30- 40 शब्दों में एक आकर्षक विज्ञापन तैयार कीजिए।
(ख)   अपने पुराने मकान को बेचने हेतु एक सुंदर एवं आकर्षक विज्ञापन 25 से 30 शब्दों में बनाइए।
(ग)   स्वच्छ भारत अभियान से संबंधित 30- 40 शब्दों में एक विज्ञापन तैयार कीजिए।

प्रश्न(4) निम्नलिखित प्रश्नों के उत्तर पाठ्यपुस्तक के आधार पर दीजिए-

(क)   आदर्श स्थिति बनाए रखने के लिए बड़े भाई साहब का बचपन कैसे तिरोहित हो जाता है?

(ख)   कबीर ने किस घर को जलाने की बात की है? वर्तमान में यह कितना युक्ति संगत है?

(ग)   कथा नायक को क्या-क्या करना पसंद था?

(घ)   कबीर दास जी ने अपने दोहे में हिरण का उदाहरण किस संदर्भ में दिया है? क्या आप भी कबीर दास जी के विचार से सहमत हैं या नहीं? तर्क सहित उत्तर दीजिए।

(ड़)   अहंकार का भाव भक्ति मार्ग की सबसे बड़ी बाधा है। इस विषय पर अपने विचार व्यक्त कीजिए।

(च)   भक्ति भाव को जागीर क्यों कहा गया है ?इसके लिए क्या आवश्यक है?

(छ)   निर्गुण और सगुण भक्ति में क्या अंतर है? दोनों से संबंधित किन्हीं दो कवि या कवियत्रियों के नाम लिखिए।

(ज)   स्वतंत्रता प्राप्त करने के लिए भारतीयों को कौन-कौन से कष्ट सहने पड़े? 'डायरी का एक पन्ना' पाठ के आधार पर उत्तर दीजिए।

(झ)   कृष्ण की चाकरी से मीरा को क्या लाभ मिलेगा?

(ष)   कबीर दास जी किन जीवन मूल्यों को मानव के लिए आवश्यक मानते हैं?

प्रश्न(5) निम्नलिखित मुहावरों के अर्थ लिखकर उपयुक्त वाक्य बनाइए-

खून जलाना, सूक्ति बाण चलाना, जिगर के टुकड़े-टुकड़े होना, गाढ़ी कमाई, आड़े हाथों लेना, घाव पर नमक छिड़कना, तलवार खींचना, दिमाग हो जाना, अंधे के हाथ बटेर लगना, चुल्लू भर पानी देने वाला ना होना, बे-सिर पैर की बातें करना, आटे- दाल का भाव मालूम होना, प्राणांतक परिश्रम करना, आपा खोना, लाज रखना, रंग दिखाना, कलंक धुलना, हाथ पांव फूलना, दबे पांव आना, पापड़ बेलना।

प्रश्न(6) निम्नलिखित रिक्त स्थानों की पूर्ति उचित मुहावरों से कीजिए-

(क)   भ्रष्टाचार की ········ से कोई नहीं चूक रहा

(ख)   बेटे के अनुत्तीर्ण होने का समाचार सुनकर पिताजी ·········।

(ग)   यदि आर्थिक स्थिति ठीक ना हो तो ······· ठीक बात नहीं।

(घ)   अपने मेहमानों के स्वागत में ·········हम भारतीयों की संस्कृति है।

(ड़)   गरीब माता-पिता अपना········ कर बच्चों का पालन पोषण करते हैं।

Activities:

(1)   मनुष्यता की भावना को विकसित करने तथा परोपकार हेतु प्रत्येक छात्र ग्रीष्मावकाश में नेक कार्यों में भाग लेगा तथा उससे संबंधित तीन या चार चित्र अपनी उत्तर पुस्तिका में चिपकाएगा।

(2)   प्रकृति पर आधारित एक सुंदर कविता लिखिए और चित्र भी बनाइए।

(3)   राष्ट्रीय एवं सांस्कृतिक धरोहरों के चित्र एवं उनके नाम लिखिए।

(4)   निडर, साहसी और बुद्धिमान देश भक्तों के नाम तथा उनका संक्षिप्त परिचय दीजिए।

(5)   भगवान विष्णु के 10 अवतारों के नाम लिखिए तथा उनके चित्र भी चिपकाइए ।

(6)   'डायरी का एक पन्ना' पाठ के आधार पर स्वतंत्रता आंदोलन में भाग लेने वाले पांच क्रांतिकारियों के नाम लिखिए तथा उनका संक्षिप्त परिचय दीजिए।

Note-   जुलाई परीक्षा के लिए निम्नलिखित पाठ्यक्रम याद कीजिए-

गद्य भाग- बड़े भाई साहब, डायरी का एक पन्ना, तताँरा वामीरो कथा।

पद्य भाग- कबीर की साखी, मीरा के पद

हिंदी व्याकरण की पुस्तक में से 1 से 10 तक अनुच्छेद लेखन याद कीजिए तथा 1 से लेकर 100 तक मुहावरे याद कीजिए।

PHYSICAL EDUCATION

1.Prepare 5 yoga poses on chart & there benefit.

2 draw track on chart paper

3) write 1 & 2 chapters in notebook

4. Assignment. Role of physical education in child development

SCIENCE

➢ **REVISE ALL THE WORK DONE IN YOUR NOTEBOOK.**

➢ **MAKE ANY THREE POSTER ON A3 SHEET ON THE GIVEN TOPIC.**
   1. **Hemodialysis**
   2. **Human heart**
   3. **Save earth**
   4. **Stop plastic pollution**
   5. **Conservation of future diversity**
   6. **Save ozone layer**
   7. **Neurotransmitter mechanism**

➢ **MAKE ONE WORKING MODEL ON THE MENTIONED ROLL NO. BELOW:**

1.	**HYDROPOWER PLANT**	**ROLL NO. (1 TO 3,39)**
2.	**NUCLEAR POWER PLANT**	**ROLL NO. (4 TO 7)**
3.	**HUMAN HEART**	**ROLL NO. (8 TO 10)**
4.	**WASTE WATER TREATMENT PLANT**	**ROLL NO. (11 TO 15)**
5.	**EECTRIC POWER PLANT**	**ROLL NO. (16 TO 18)**
6.	**PNEUMATIC MACHINE**	**ROLL NO.(19 TO 21)**
7.	**HIGH TONNEL GREEN HOUSE**	**ROLL NO. (22 TO 25)**
8.	**DOUBLE CIRCULATION**	**ROLL NO.(26 TO 28)**
9.	**HUMAN EXCRETORY SYSTEM**	**ROLL NO.(29 TO 31)**
10.	**HUMAN DIGESTIVE SYSTEM**	**ROLL NO (32 TO 34)**
11.	**DOUBLE CIRCULATION**	**ROLL NO.(34 TO 38)**
12.	**PHOTOSYNTHESIS**	**ROLL NO.(40 TO 44)**

➢ **SOLVE THESE ASSIGNMENT IN YOUR SCIENCE NOTEBOOK.**

PHYSICS

1. If the if the image formed by a spherical mirror for all positions of the object in front of it is always erect and diminished, What type of mirror is it? Draw a Diagram to support your answer.

2. State the laws of refraction of light .Explain the term absolute refractive index of a medium and write an expression to relate it with the speed of light in vacuum.

3. Draw ray diagrams to show the formation of three times magnified(a) real,and (b) virtual Image of an object by a converging lens. Mark the positions of O,F and in each diagram.

4. State the two laws of reflection of light.

5. A concave Mirror has a focal length of 20 centimeter. At what distance From the mirror should A 4 centimeter tall object could be placed so that it forms an image at a distance of 30 centimeters from the mirror? Also calculate the size of the image formed.

6. The image of an object formed by a mirror is real, inverted and is of magnification -1. If the image is at a distance of 40 centimeter From the mirror, where is the object placed? Where would be the image be if the object is moved to 20 centimeter towards the mirror? State reason and also draw ray diagram For the new position of the object to justify your answer.

7. The refractive index of glass and water with respect to air are 3/2 and 4/3 respectively. If the speed of light in glass is. 2×10^8 m/s, Find the speed of light in water

8.(a) Water has refractive index 1.33 and alcohol as refractive index 1.36. Which of the two medium is optically denser? Give reason for your answer.

(b) Draw a ray diagram to show the path of a ray of light passing obliquely from water to alcohol

(c) State the relationship between angle of incidence and angle of refraction in the above case.

9. What is meant by power of a lens? Write its SI unit. A student uses a lens of focal length 40 cm and another of -20cm. Write the nature and power of each lens?

10. Rishi went to a palmist to show his palm. The palmist used as spherical lens for this purpose

(i) State the nature of the lens and reason for its use.

(ii) Where should the palmist place /hold the lens so as to have a real and magnified image of an object?

(iii) If the focal length of this lens is 10 cm, the lens is held at a distance of 5 cm. from the palm , use lens formula to find the position and size of the image.

11. (a) A 5 cm. tall object is placed perpendicular to the principal axis of a convex lens of focal length 20 cm. The distance of the object from the lens is 30 cm. Find the position, nature and size of the image formed.

(b) Draw a labeled ray diagram showing objective distance, image distance and focal length in the above case.

12. A convex lens can form a magnified erect as well as magnified inverted image of an object placed in front of it. Draw ray diagram to justify this statement stating the position of the object with respect to the lens in each case .

13. An object of height. 4 cm is placed at a distance of 20 cm from a concave lens of focal length 10 cm. Use length formula to determine the position of the image formed. Size of image of an object by mirror have a focal length of 20 cm is observed to be reduced to 1/3 of its size .At what distance the object has been placed from the mirror? What is the nature of the image and the mirror?

14.(i) A doctor has prescribed a corrective lens of power +1.5 D. Find the focal length of the lens. Is the prescribed lens diverging or converging ?

ii. A concave lens of focal length 15 cm form an Image 10 cm. from the lens. How far of the object placed from the lens ? Draw the ray Diagram

CHEMISTRY

1. Write chemical equations for the following reactions and balance them

(i) Silver bromide on exposure to sunlight decomposes into silver and bromine.

(ii) Sodium metal reacts with water to form sodium hydroxide and Hydrogen gas.

(iii) A solution of barium chloride and sodium sulpate in water reacts to give insoluble barium sulphate and solution of sodium chloride.

(iv) Hydrogen gas combines with nitrogen to form ammonia.

(v) Hydrogen sulphide gas burns in air to give water and sulphur dioxide.

(vi) Barium chloride reacts with ammonium sulphate to give ammonium chloride and precipitate of barium sulphate.

(vii) Potassium metal reacts with water give potassium hydroxide and hydrogen gas.

(viii) Sodium carbonate on reaction with hydrochloric acid gives sodium chloride and sodium hydrogen carbonate.

(ix) copper sulphate on treatment with potassium iodide precipitates cuprous iodide ,liberates iodine gas and also from potassium sulphate.

2. State one basic difference between physical and chemical change.

3. On what basis of chemical reaction is ?

4. Write a balanced equation between sodium chloride and silver nitrate indicating the physical state of the reactant and product.

5. Why should magnesium ribbon be cleaned before burning in air?

6. using a suitable chemical equation, justify that some chemical reactors reactions are determined by

(i) chang e in colour   (ii) changing temperature

(iii) evolution of light   (iv) changing state.

7. How will you test for the gas which is liberated by hydrochloric acid react with an active metal ?

8. State any two observations in an activity, which may suggest that a chemical reaction has taken place? give Example to support your answer.

9. A magnesium ribbon is burnt in oxygen to give a white compound accompanied by emission of light. If the burning ribbon is now placed in atmosphere of nitrogen, it continues to burn and forms a compound Y

(i) Write the chemical formula of X and Y.

(ii) Write a balanced chemical equation when X is dissolved in water.

10. What happens when piece of-

(i) Zinc metal is added to copper sulphate solution?

(ii) Alluminium metal is added to dilute hydrochloric acid.

(iii) Silver metal is added to copper sulphate solution.

11. What happens chemically when quicklime is added to water?

12. Solid calcium oxide was taken in the container and water was added slowly to it,

(i)   State two observations made in the experiment.

(ii) Write the name and chemical formula of the product formed

13. What is oxidation reaction?

(I) Identify the Substance oxidised (ii) the substance reduced in the given equation.

14. Give an example of photochemical reaction.

15. Give an example of decomposition reaction.

16. Give an example of combination reaction.

17. What happens when hydrogen combined with oxygen in presence of electric current?

18. Why do gold and air do not corrode in moist air?

19. What happens When dilute hydrochloric acid is added to iron fillings?

20. Distinguish between Displacement reaction and double displacement reaction.

21. What change in colour is observed when white silver chloride is left to expose to sunlight?

22. Why do potato chips manufacturers Fill the packet of chips with nitrogen gas?

BIOLOGY

1. How do fungi obtain nutrition

(i) By eating the bread on which it is growing

(ii) By using nutrients from the bread to prepare their own food

(iii) by breaking down the nutrients of bread and then absorbing them

(iv) None of the above

2. In which mode of nutrition an Organism derives its food from the body of another living Organism. Without killing it,

(i) Saprotrophic nutrition

(ii) parasitic nutrition

(iii) Holozoic nutrition

(iv) Autotrophic nutrition.

3. Name the component of blood that helps in the formation of blood clot in the event of a cut.

4. Stomata remain closed in desert plants during daytime, how do they do photosynthesis?

5. Why is there a difference in the rate of breathing between aquatic organisms and terrestrial organisms? Explain.

6. Write two different ways in which glucose is oxidised to provide energy in human body. write the product formed in each case.

7. List in tabular form 3 differences between an artery and vein.

8. Draw a diagram of human respiratory system and label—
Pharynx, trachea, lungs, diaphragm and alveolar sac on it..

9. Explain blood circulation in human heart.

10. Describe in brief how urine is produced in human body?

SOCIAL STUDIES

Make a Project file on given topics.
Consumer Rights or Social Issues
                Or
Sustainable Development

Make a Model on given topics:
1. Working model on Drip Irrigation
2. Swachh Bharat Mission
3. Rain Water harvesting
4. Disaster Management (Working model)

- Do the following map work on the Political Map of India.
  Map related with Ch.1,2 of Geography and ch.2 of History.

Assignment:(learn and write)
1.How was the Non cooperation Khilafat Movement carried in towns? Why did it gradually lose the momentum?
2.Discuss the salt March to make clear why it was an effective symbol of resistance against colonialism.
3.How did the first world war help in the growth of the National Movement in India?
4.Why Gandhi ji decided to withdraw the Non-cooperation Movement?
5.What is meant by the idea of satyagraha?
6.Describe the Jallianwala Bagh Massacre and write a note on the Simon Commission.
7.What is biodiversity?
8. Why is it necessary to increase the area of forest in India?
9.What is the JFM programme? Which was the first state of adopting this programming?
10 Define the following:
i) Reserved forests (ii) protected forests
iii) Unclassed forests
11. Assess the need for the conservation of forests and Wildlife in India.
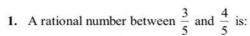12. Describe in brief Chipko Movement.

ARTIFICIAL INTELLIGENCE
Note :learn al question done in your notebook

Q1. Read Unit – 1 carefully and complete worksheet in Unit – 1 (Introduction to AI) in your registers.

Q2. Application Based (A4 size sheet) Read carefully and give answer :

AI Bias Another aspect to AI Ethics is bias. Everyone has a bias of their own no matter how much one tries to be unbiased, we in some way or the other have our own biases even towards smaller things. Biases are not negative all the time. Sometimes, it is required to have a bias to control a situation and keep things working. When we talk about a machine, we know that it is artificial and cannot think on its own. It can have intelligence, but we cannot expect a machine to have any biases of its own. Any bias can transfer from the developer to the machine while the algorithm is being developed. Now Think and write the answer of the followings :

1. Majorly, all the virtual assistants have a female voice. It is only now that some companies have understood this bias and have started giving options for male voices but since the virtual assistants came into practice, female voices are always preferred for them over any other voice. Can you think / write of some reasons for this?

2. If you search on Google for salons, the first few searches are mostly for female salons. This is based on the assumption that if a person is searching for a salon, in all probability it would be a female. Do you think this is a bias? If yes, then is it a Negative bias or Positive one?

3. DIFF BETWEEN RULE BASED AND LEARNING BASED AI APPROCHES

4. DIFF BETWEEN SUPERVISED AND UNSUPERVISED AND REINFORCEMENT LEARNING MODELS

5. DIFF BETWEEN SCRIPT BOARDS AND SMART BOARDS

6. Explain the process of AI project cycle

Maths

1. A rational number between $\frac{3}{5}$ and $\frac{4}{5}$ is:

   (a) $\frac{7}{5}$ (b) $\frac{7}{10}$ (c) $\frac{3}{10}$ (d) $\frac{4}{10}$

2. A rational number between $\frac{1}{2}$ and $\frac{3}{4}$ is:

   (a) $\frac{2}{5}$ (b) $\frac{5}{8}$ (c) $\frac{4}{3}$ (d) $\frac{1}{4}$

3. Which one of the following is not a rational number:

   (a) $\sqrt{2}$ (b) 0 (c) $\sqrt{4}$ (d) $\sqrt{-16}$

4. Which one of the following is an irrational number:

   (a) $\sqrt{4}$ (b) $3\sqrt{8}$ (c) $\sqrt{100}$ (d) $-\sqrt{0.64}$

5. $3\frac{3}{8}$ in decimal form is:

   (a) 3.35 (b) 3.375 (c) 33.75 (d) 337.5

6. $\frac{5}{6}$ in the decimal form is:

   (a) $0.8\overline{3}$ (b) $0.8\overline{33}$ (c) $0.6\overline{3}$ (d) $0.6\overline{33}$

7. Decimal representation of rational number $\frac{8}{27}$ is:

   (a) $0.\overline{296}$ (b) $0.29\overline{6}$ (c) $0.2\overline{96}$ (d) 0.296

8. $0.6666\ldots\ldots$ in $\frac{p}{q}$ form is:

   (a) $\frac{6}{99}$ (b) $\frac{2}{3}$ (c) $\frac{3}{5}$ (d) $\frac{1}{66}$

9. The value of $\left(\sqrt{5}+\sqrt{2}\right)\left(\sqrt{5}-\sqrt{2}\right)$ is:

   (a) 10 (b) 7 (c) 3 (d) $\sqrt{3}$

10. $0.\overline{36}$ in $\frac{p}{q}$ form is:

    (a) $\frac{6}{99}$ (b) $\frac{2}{3}$ (c) $\frac{3}{5}$ (d) none of these

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Assignment 2

1. Find the values of k for which the quadratic equation $k^2x^2 - 2(k-1)x + 4 = 0$ has real and equal roots.

    (a) $k = 0$ or $k = \dfrac{1}{3}$ (b) $k = 1$ or $k = \dfrac{1}{3}$ (c) $k = -1$ or $k = \dfrac{1}{3}$ (d) $k = -3$ or $k = \dfrac{1}{3}$

2. If –4 is a root of the equation $x^2 + px - 4 = 0$ and the equation $x^2 + px + q = 0$ has equal roots, find the value of p and q.

    (a) $p = 3$, $q = 9$ (b) $p = 9$, $q = 3$ (c) $p = 3$, $q = \dfrac{4}{9}$ (d) $p = 3$, $q = \dfrac{9}{4}$

3. If the roots of the equation $(a-b)x^2 + (b-c)x + (c-a) = 0$ are equal, then $b + c =$
    (a) $2a$ (b) $2bc$ (c) $2c$ (d) none of these

4. Find the positive value of k for which the equations $x^2 + kx + 64 = 0$ and $x^2 - 8x + k = 0$ will have real roots.
    (a) 8   (b) 16   (c) –8   (d) –16

5. Find the positive value of k for which the equation $kx^2 - 6x - 2 = 0$ has real roots
    (a) $k \le \dfrac{-9}{2}$ (b) $k \ge \dfrac{-9}{2}$ (c) $k > \dfrac{-9}{2}$ (d) $k < \dfrac{-9}{2}$

6. Find the positive value of k for which the equation $3x^2 + 2x + k = 0$ has real roots
    (a) $k \ge \dfrac{1}{3}$ (b) $k \le \dfrac{1}{3}$ (c) $k > \dfrac{1}{3}$ (d) $k < \dfrac{1}{3}$

7. Find the positive value of k for which the equation $2x^2 + kx + 2 = 0$ has real roots
    (a) $k \ge 4$ (b) $k \le -4$ (c) both (a) and (c)   (d) none of these.

8. The sum of a number and its reciprocal is $\dfrac{10}{3}$. Find the number.

    (a) 3   (b) $\dfrac{1}{3}$ (c) both (a) and (c)   (d) none of these

9. Divide 12 into two parts such that the sum of their squares is 74.
    (a) 7 and 5   (b) 8 and 4   (c) 10 and 2   (d) none of these

10. The sum of the squares of two consecutive natural numbers is 421. Find the numbers.
    (a) 14 and 5   (b) 14 and 15   (c) 10 and 5   (d) none of these

Assignment 3

1. The pair of equations $3x + 4y = 18$ and $4x + \dfrac{16}{3}y = 24$ has

   (a) infinite number of solutions   (b) unique solution

   (c) no solution   (d) cannot say anything

2. If the pair of equations $2x + 3y = 7$ and $kx + \dfrac{9}{2}y = 12$ have no solution, then the value of k is:

   (a) $\dfrac{2}{3}$ (b) -3 (c) 3 (d) $\dfrac{3}{2}$

3. The equations $x - y = 0.9$ and $\dfrac{11}{x + y} = 2$ have the solution:

   (a) $x = 5$ and $y = a$ (b) $x = 3, 2$ and $y = 2, 3$ (c) $x = 3$ and $y = 2$ (d) none of these

4. If $bx + ay = a^2 + b^2$ and $ax - by = 0$, then the value of $x - y$ equals:

   (a) $a - b$ (b) $b - a$ (c) $a^2 - b^2$ (d) $b^2 + a^2$.

5. If $2x + 3y = 0$ and $4x - 3y = 0$, then $x + y$ equals:

   (a) 0 (b) -1 (c) 1 (d) 2

6. If $\sqrt{a}x - \sqrt{b}y = b - a$ and $\sqrt{b}x - \sqrt{a}y = 0$, then the value of x, y is:

   (a) $a + b$ (b) $a - b$ (c) $\sqrt{ab}$ (d) $-\sqrt{ab}$

7. If $\dfrac{2}{x} + \dfrac{3}{y} = 13$ and $\dfrac{5}{x} - \dfrac{4}{y} = -2$, then $x + y$ equals:

   (a) $\dfrac{1}{6}$ (b) $-\dfrac{1}{6}$ (c) $\dfrac{5}{6}$ (d) $-\dfrac{5}{6}$

8. If $31x + 43y = 117$ and $43 + 31y = 105$, then value of $x - y$ is:

   (a) $\dfrac{1}{3}$ (b) -3 (c) 3 (d) $-\dfrac{1}{3}$

9. If $19x - 17y = 55$ and $17x - 19y = 53$, then the value of $x - y$ is:

   (a) $\dfrac{1}{3}$ (b) -3 (c) 3 (d) 5

10. If $\dfrac{x}{2} + y = 0.8$ and $\dfrac{7}{\left(x + \dfrac{y}{2}\right)} = 10$, then the value of $x + y$ is:

   (a) 1 (b) -0.8 (c) 0.6 (d) 0.5

1. If α, β are the zeroes of the polynomials $f(x) = x^2 + x + 1$, then $\dfrac{1}{\alpha} + \dfrac{1}{\beta}$

   (a) 0   (b) 1   (c) –1   (d) none of these

2. If one of the zero of the polynomial $f(x) = (k^2 + 4)x^2 + 13x + 4k$ is reciprocal of the other then k =

   (a) 2   (b) 1   (c) –1   (d) – 2

3. If α, β are the zeroes of the polynomials $f(x) = 4x^2 + 3x + 7$, then $\dfrac{1}{\alpha} + \dfrac{1}{\beta}$

   (a) $\dfrac{7}{3}$ (b) $\dfrac{-7}{3}$ (c) $\dfrac{3}{7}$ (d) $\dfrac{-3}{7}$

4. If the sum of the zeroes of the polynomial $f(x) = 2x^3 - 3kx^2 + 4x - 5$ is 6, then value of k is

   (a) 2   (b) 4   (c) –2   (d) – 4

5. The zeroes of a polynomial $p(x)$ are precisely the x-coordinates of the points, where the graph of $y = p(x)$ intersects the

   (a) x – axis   (b) y – axis   (c) origin   (d) none of the above

6. If α, β are the zeroes of the polynomials $f(x) = x^2 - p(x + 1) - c$, then $(\alpha + 1)(\beta + 1) =$

   (a) c – 1   (b) 1 – c   (c) c   (d) 1 + c

7. A quadratic polynomial can have at most …….. zeroes

   (a) 0   (b) 1   (c) 2   (d) 3

8. A cubic polynomial can have at most …….. zeroes.

   (a) 0   (b) 1   (c) 2   (d) 3

9. Which are the zeroes of $p(x) = x^2 - 1$:

   (a) 1, –1   (b) – 1, 2   (c) –2, 2   (d) –3, 3

10. Which are the zeroes of $p(x) = (x - 1)(x - 2)$:

    (a) 1, –2   (b) – 1, 2   (c) 1, 2   (d) –1, –2

Assignment -5

I.   NUMBER BASED QUESTIONS

SIMPLE PROBLEMS

1. The sum of two numbers is 137 and their difference is 43. Find the numbers.

2. The sum of thrice the first and the second is 142 and four times the first exceeds the second by 138, then find the numbers.

3. Sum of two numbers is 50 and their difference is 10, then find the numbers.

4. The sum of twice the first and thrice the second is 92 and four times the first exceeds seven times the second by 2, then find the numbers.

5. The sum of two numbers is 1000 and the difference between their squares is 25600, then find the numbers.

6. The difference between two numbers is 14 and the difference between their squares is 448, then find the numbers.

7. The sum of two natural numbers is 8 and the sum of their reciprocals is $\dfrac{8}{15}$. Find the numbers.

TWO-DIGIT PROBLEMS

1. The sum of the digits of a two digit number is 12. The number obtained by interchanging the two digits exceeds the given number by 18. Find the number.

2. Seven times a two-digit number is equal to four times the number obtained by reversing the order of its digit. If the difference between the digits is 3, then find the number.

3. The sum of the digits of a two digit number is 9. Also, nine times this number is twice the number obtained by reversing the order of the digits. Find the number.

Assignment -6

1. The difference of two numbers is 5 and the difference of their reciprocals is $\frac{1}{10}$. Find the numbers.

2. Find two consecutive odd positive integers, sum of whose squares is 290.

3. The difference of the squares of two numbers is 45. The squares of the smaller number are 4 times the larger number. Find the numbers.

4. The sum of the squares of the two positive integers is 208. If the square of the larger number is 18 times the smaller number, find the numbers.

5. The denominator of a fraction is 3 more than its numerator. The sum of the fraction and its reciprocal is $2\frac{9}{10}$. Find the fraction.

6. The denominator of a fraction is one more than twice the numerator. The sum of the fraction and its reciprocal is $2\frac{16}{21}$. Find the fraction.

7. Two numbers differ by 3 and their product is 504. Find the numbers.

8. Find three consecutive positive integers such that the sum of the square of the first and the product of the other two is 154.

9. The sum of two numbers is 16 and the sum of their reciprocals is $\frac{1}{3}$. Find the numbers.

10. The sum of two numbers is 18 and the sum of their reciprocals is $\frac{1}{4}$. Find the numbers.