INDIAN SCHOOL MULADHA

Worksheet-5- Translation, Grammar-MCQ & Paragraph Writing

CLASS-10 SUBJECT – ARABIC

NAME:_____CLASS: 10-

DATE OF SUBMISSION _____

I. Translate the following sentences in to Arabic.

March-2018- Board Exam

Translate the following in English

1. هما طالبان جديدان _____

2. زينب و فاطمة و سيتا ذهبن إلى المدرسة_____

3. مسلمو الهند مجتهدون _____

4. هم أولاد صغار _____

5. من أين أنت يا أخي _____

6. أنا من الهند _____

7. كتب الأستاذ الدَّرْسَ علي السَّبورة_____

8. ذهب الطلاب إلي المكتبة _____

Translate the following in Arabic

1. He went to school _____

2. This is my book _____

3. What are you doing _____

4. How is your teacher _____

5. Yes I am a student _____

6. There is a beautiful garden in my

school_____

7. Do you want to learn Arabic? _____

8. They are playing football. _____

March-2019- Board Exam
Translate the following in English

1. هذا الكتاب جديد _____

2. الولد مجتهد محبوب _____

3. كيف حالك ياأخي _____

4. هم يذهبون إلى المدرسة _____

5. أين والدك؟ _____

6. متي إمتحانك يا حامد _____

7. انا أحب أن أكون مهندساً _____

8. ماذا تعمل؟ _____

Translate the following in Arabic

1. I am a teacher _____

2. You are a good student _____

3. What is your name _____

4. That is a school _____

5. Where do you live? _____

6. The teacher went to the library

_____

7. I want to read this book_____

8. They are playing football._____

II. Fill in the blanks with suitable number given in the brackets.

1)دفعت _____ روبيات للتاجر   (سبع / سبعة)

2)_____ مدرسان   (إثنان / إثنتان)

3)لعب _____ طلاب   (خمس / خمسة)

4)رجع _____ عمال من الهند   (ثلاث / ثلاثة)

5)في صفي _____ بنات من مدارس   (تسع / تسعة)

6)ذهب _____ طلاب إلى أغره   (أربع / أربعة)

7)خرجت _____ ممرضات من المستشفى (ست / ستة)

8)بنت _____   (واحد / واحدة)

9)ولد _____   (واحد / واحدة)

10)   _____ كتب   أولاد   (ثلاثة / ثلاث)

11)   رجعت _____ نبيلات   (ثماني / ثمانية)

12)   معلمتان _____   (إثنتان / إثنان)

13)   كان _____واقفين في طابور طويل.   (المسافران /

المسافرين)

14)   باب المدرسة_____.   (مفتوح / مفتوحة)

III. Write a paragraph of your own (consists min.10 sentences) on each of the
following topics in **Arabic.**

1. أُسرَتِيْ

_____

_____

_____

_____

_____

_____

2. **صَدِيْقِي**

_____

_____

_____

_____

_____

3. الحَدِيْقَةُ

_____

_____

_____

_____

_____

4. اللغة العَرَبِية

_____

_____

_____

_____

_____

5. مُدَرّسِيْ \ مُدَرّسَتِيْ

_____

_____

_____

_____

_____

Name: _____

Class: X

Date: 15/06/2023

Chapter No.: 6, 7 & 8

Prepared by: Mrs. Sheeja Abdul Jaleel

Biology

1. Why is the process of diffusion insufficient to meet the oxygen requirement of human beings?

2. Leaves of a healthy potted plant were covered with petroleum jelly. How will it affect the plant? State two reasons.

3. Mucus is not used for churning the food or digesting it. Then why is it secreted in the stomach?

4. While eating you are advised not to talk. Why are you advised so?

5. Tooth enamel is one of the hardest substances in our body. How does it undergo damage due to eating chocolates and sweets?

6. Which of the four chambers of the human heart has the thickest muscular walls?

7. A leaf shaped gland is present above the intestine. The secretion of this gland regulates the metabolism of sugar in blood. Name the gland and its secretion.

8. A man becomes unconscious due to head injury. A pin is pricked on his foot, he withdraws his foot. Why? Explain.

9. On touching a hot plate, you suddenly withdraw your hand. Which category of neurons became active first and which one next?

10. Give one example of plant part.
    a. Which is positively hydrotropic as well as positively geotropic.
    b. Which is positively phototropic but negatively geotropic.

11. Why the growth hormone should be specific during the childhood?

12. Explain how adrenaline helps in dealing emergency situations.

13. How does the plant shoot bend, when the plant is placed in a room having only one open window?

14. What are the advantages of vegetative propagation?

15. Variation is essential for the survival of species not necessarily for the individuals. Comment on it with the help of a suitable example.

16. Explain the following: -
    a. budding in Hydra.
    b. binary fission in *Amoeba* and *Leishmania*
    c. multiple fission in *Plasmodium*
    d. Fragmentation in spirogyra

17. Ravi often feels weak and is unable to keep up with his classmates. Upon examination, his doctor finds that his haemoglobin levels are significantly low. What could be the possible reason for Ravi's condition? How can it be treated?

18. Ananya, a 12-year-old girl, complains of frequent urination and excessive thirst. Her parents notice that she has been losing weight despite having a good appetite. On consulting a doctor, she is diagnosed with diabetes mellitus. Explain the underlying cause of Ananya's condition and suggest appropriate management strategies.

19. Sunita, a 55-year-old woman, has been diagnosed with chronic kidney disease. Her kidneys are unable to filter waste products and excess fluid from her blood effectively. Describe the role of the kidneys in excretion and maintaining homeostasis in the body. Discuss the possible causes of Sunita's kidney disease and its implications on her overall health.

20. Ajay, a 25-year-old man, works in a coal mine. He frequently complains of coughing, chest pain, and difficulty breathing. After conducting tests, his doctor informs him that he has developed coal worker's pneumoconiosis. Explain the process of respiration and the impact of inhaling coal dust on the respiratory system. Discuss preventive measures that can be taken to reduce the risk of occupational lung diseases.

21. Rohit, a 16-year-old boy, is a competitive swimmer. Lately, he has been experiencing muscle cramps and fatigue during his training sessions. Discuss the process of cellular respiration and the role of oxygen in energy production during physical activities. Explain the possible causes of Rohit's symptoms and suggest strategies to improve his athletic performance.

22. Draw a diagram of human alimentary canal and label stomach, small intestine, liver and pancreas.

23. Draw a diagram of the human urinary system and label its parts.

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INDIAN SCHOOL MULADHA
Academic year 2023 – 2024

Name: _____
Class & Divn: X ___
Date:

Portfolio-Term 1
Summer Vacation Task
Prepared by: Arjun R

ENGLISH

PORTFOLIO – ENGLISH (TERM 1)
CLASS X: 2023-2024 Batch

1. Write a biographical sketch (in 200-250 words) of any two famous freedom fighters giving details about their childhood, their rise from a normal life to the life of a freedom fighter or revolutionary highlighting the ordeals, sacrifices and struggles they faced in achieving liberation or freedom for their people. You may refer Unit 2, Nelson Mandela: Long Walk to Freedom of the First Flight textbook to prepare a similar write up. The assignment must include their pictures and pictures relating to their freedom movement. Bibliography is required.

2. Write a book review of any one book written by the following writers (150 – 200 words):

- Charles Dickens
- Roald Dahl
- J K Rowling
- R K Narayan
- Sudha Murty
- Ruskin Bond

Give emphasis to summary, best characters, theme/ message etc. Include some pictures or art work that correlates with the book review and the story.

3. Write a poem in 20 lines (120-140 words) based on any one of the following themes:

- Family
- Friends
- Nature
- Festivals
- Values

Include any three of the following poetic devices in the poem:

Alliteration, Metaphor, Simile, Repetition and Imagery. A rhyme scheme can be considered to make the poem lyrical. Kindly avoid plagiarism.

Format of Cover page (Only handwritten page is permitted):

Kindly note:

1. Only A4 sheets are to be used.

2. Use one side of the sheets for all the tasks.

3. Border and page number are to be mentioned on each page.

4. Neatness and perfection are to be ensured in the entire portfolio.

5. Make the Portfolio very attractive, colourful, and include illustrations.

6. Staple the three tasks in order

7. File the entire portfolio using a transparent stick file.

8. All the tasks and pages must be handwritten.

Date of submission: 13 August 2023 (Sunday)

Hindi (Course B)

I. निम्नलिखित प्रश्नों के लिए सही विकल्प चुनिए:

1. दो अथवा दो से अधिक शब्दों से मिलकर बने हुए नए सार्थक शब्द को क्या कहते हैं?

     (a) संधि   (b) समास   (c) अव्यय   (d) छंद

2. समास का शाब्दिक अर्थ होता है -

     (a) संक्षेप   (b) विस्तार   (c) विग्रह   (d) विच्छेद

3. निम्नांकित में कौन-सा पद अव्ययीभाव समास है?

     (a) गंगाजल   (b) राजा-रंक   (c) यथाशक्ति   (d) राजकुमारी

4. जिस समास में उत्तर-पद प्रधान होने के साथ ही साथ पूर्व-पद तथा उत्तर-पद में विशेषण-विशेष्य का संबंध भी होता है, उसे कौन-सा समास कहते हैं ?

     (a) बहुव्रीहि   (b) कर्मधारय   (c) तत्पुरुष   (d) द्वन्द्व

5. जिस समास के दोनों पद अप्रधान होते हैं, वहाँ पर कौन-सा समास होता है?

     (a) द्वन्द्व   (b) द्विगु   (c) तत्पुरुष   (d) बहुव्रीहि

6. 'सतसई' में कौन-सा समास है ?

     (a) अव्ययीभाव   (b) कर्मधारय   (c) द्विगु   (d) बहुव्रीहि

7. 'दूसरों का उपकार' का समस्त पद है -

     (a) परउपकार   (b) परोपकार   (c) दूसरा उपकार   (d) परुपकार

8. 'नीलगगन' में कौन-सा समास है ?

     (a) कर्मधारय   (b) बहुव्रीहि   (c) तत्पुरुष   (d) द्विगु

9. 'शताब्दी' में कौन-सा समास है ?

     (a) तत्पुरुष   (b) द्विगु   (c) कर्मधारय   (d) द्वन्द्व

10. 'घोड़े के लिए साल' का समस्त पद है -

     (a) घोड़ेसाल   (b) घुड़साल   (c) घोड़ासाल   (d) घूड़साल

11. निम्नलिखित में से एक शब्द में द्विगु समास है, उस शब्द का चयन कीजिए?

     (a) आजीवन   (b) अन्नजल   (c) चौराहा   (d) चंद्रमुख

12. इनमें से द्वन्द्व समास का उदाहरण है?

     (a) पीताम्बर   (b) सेनापति   (c) प्रत्येक   (d) रुपयापैसा-

13. 'रात-दिन' में कौन-सा समास है?

(a) कर्मधारय　　　　(b) द्वन्द्व　　　　(c) तत्पुरुष　　　　(d) बहुव्रीहि

14. 'लंबोदर' में कौन-सा समास है?

(a) द्वन्द्व　　　　(b) द्विगु　　　　(c) तत्पुरुष　　　　(d) बहुव्रीहि

15. 'भयभीत' में कौन-सा समास है?

(a) अव्ययीभाव　　　　(b) तत्पुरुष　　　　(c) द्विगु　　　　(d) बहुव्रीहि

16. 'कमलनयन' में कौन-सा समास है ?

(a) द्विगु　　　　(b) कर्मधारय　　　　(c) तत्पुरुष　　　　(d) अव्ययीभाव

17. 'अकालपीड़ित' में कौन-सा समास है ?

(a) बहुव्रीहि　　　　(b) तत्पुरुष　　　　(c) द्विगु　　　　(d) कर्मधारय

18. 'महात्मा' में कौन-सा समास है?

(a) बहुव्रीहि　　　　(b) तत्पुरुष　　　　(c) कर्मधारय　　　　(d) द्विगु

19. 'वीणापाणि' में कौन-सा समास है?

(a) द्वन्द्व　　　　(b) बहुव्रीहि　　　　(c) तत्पुरुष　　　　(d) कर्मधारय

20. 'आजन्म' शब्द --------- समास का उदाहरण है?

(a) अव्ययीभाव　　　　(b) तत्पुरुष　　　　(c) द्वन्द्व　　　　(d) द्विगु

II. निम्नलिखित पद्यांश को पढ़कर पूछे गए प्रश्नों के उत्तर के लिए सही विकल्प का चयन कीजिए-

'मनुष्य मात्र बंधु है' यह बड़ा विवेक है,
पुराणपुरुष स्वयंभू पिता प्रसिद्ध एक हैं।
फलानुसार कर्म के अवश्य बाह्य भेद है,
परंतु अंतरैक्य में प्रमाणभूत वेद हैं।
अनर्थ है कि बंधु ही न बंधु की व्यथा हरे,
वही मनुष्य है कि जो मनुष्य के लिए मरे ।।

(1) सबसे बड़ा विवेक क्या है?

(क) मनुष्य मात्र को अपना बंधु मानना　　　　(ख) केवल अपना स्वार्थ सिद्ध करना

(ग) अच्छे-बुरे की पहचान करना　　　　(घ) किसी से कोई संबंध न रखना

(2) सब मनुष्य परस्पर बंधु है; क्योंकि

(क) सब एक-दूसरे का ध्यान रखते हैं　　　　(ख) सब एक साथ रहते हैं

(ग) सब एक ही परमपिता परमेश्वर की संतान है।

(घ) सबको एक ही माता ने जन्म दिया है।

(3) मनुष्यों के बाह्य भेद का क्या कारण है?

(क) जन्म स्थान की भिन्नता   (ख) जन्म के समय की भिन्नता

(ग) धर्म की भिन्नता   (घ) कर्म-फल की भिन्नता

(4) कवि के अनुसार, सबसे बड़ा अनर्थ क्या है?

(क) जीवों की हत्या करना   (ख) एक भाई द्वारा दूसरे भाई की व्यथा न हरना

(ग) झूठ बोलना   (घ) कर्तव्य का पालन न करना

(5) **निम्नलिखित वाक्यों को ध्यानपूर्वक पढ़िए-**

(i) मनुष्य का सबसे बड़ा विवेक यही है कि वह संसार के सभी मनुष्यों को अपना भाई समझे

(ii) सभी मनुष्य परस्पर बंधु है

(iii) सभी मनुष्य धरती की संतान है

(iv) मनुष्य को जन्म कर्म के अनुसार मिलता है

(v) भाई को भाई की पीड़ा नहीं हरनी चाहिए

पद्यांश से मेल खाते वाक्यों के लिए उचित विकल्प चुनिए-

(क) (i), (iii), (v)

(ख) (i), (iv), (v)

(ग) (i), (ii), (iv)

(घ) (ii), (iv), (v)

III. **निम्नलिखित गद्यांश को पढ़कर पूछे गए प्रश्नों के उत्तर के लिए सही विकल्प का चयन कीजिए-**

वामीरो घर पहुँचकर भीतर ही भीतर कुछ बेचैनी महसूस करने लगी। उसके भीतर तताँरा से मुक्त होने की एक झूठी छटपटाहट थी। एक झल्लाहट में उसने दरवाजा बंद किया और मन को किसी और दिशा में ले जाने का प्रयास किया। बार-बार तताँरा का याचना भरा चेहरा उसकी आँखों में तैर जाता। उसने तताँरा के बारे में कई कहानियाँ सुन रखी थीं। उसकी कल्पना में वह एक अद्भुत साहसी युवक था। किंतु वही तताँरा उसके सम्मुख एक अलग रूप में आया। सुंदर, बलिष्ठ किंतु बेहद शांत, सभ्य और भोला। उसका व्यक्तित्व कदाचित वैसा ही था जैसा वह अपने जीवन साथी के बारे में सोचती रही थी। किंतु एक दूसरे गाँव के युवक के साथ यह संबंध परंपरा के विरुद्ध था। अतएव उसने उसे भूल जाना ही श्रेयस्कर समझा। किंतु यह असंभव जान पड़ा। तताँरा बार-बार उसकी आँखों के सामने था। निर्निमेष याचक की तरह प्रतीक्षा में डूबा हुआ।

(1) वामीरो के लिए तताँरा को भूलना आवश्यक था, क्योंकि

(क) तताँरा से मिलकर उसका मन बेचैन हो गया था।

(ख) तताँरा ने उसे गीत गाने को विवश किया था।

(ग) वह उसके जीवन साथी की कल्पना पर खरा नहीं था।

(घ) दूसरे गाँव के युवक से संबंध परंपरा के विरुद्ध था।

(2) वामीरो घर पहुँचकर कैसा महसूस कर रही थी?

(क) आह्लादित   (ख) संयत   (ग) संकुचित   (घ) असहज

(3) निम्नलिखित कथन (A) तथा कारण (R) को ध्यानपूर्वक पढ़िए। उसके बाद दिए गए विकल्पों में से कोई एक सही विकल्प चुनकर लिखिए।

कथन (A) : वामीरो घर पहुँचकर एक अजीब सी खुशी महसूस कर रही थी।

कारण (R) : वामीरो तताँरा के व्यक्तित्व से अत्यधिक प्रभावित नहीं थी।

   (क) कथन (A) तथा कारण (R) दोनों गलत हैं

   (ख) कथन (A) गलत है लेकिन कारण (R) सही है

   (ग) कथन (A) सही है लेकिन कारण (R) कथन (A) की गलत व्याख्या करता है

   (घ) कथन (A) तथा कारण (R) दोनों सही हैं तथा कारण (R) कथन (A) की सही व्याख्या करता है।

(4) वामीरो की कल्पना वाला तताँरा कैसा था?

   (क) अद्भुत - साहसी   (ख) सभ्य - भोला

   (ग) भोला- शांत   (घ) सुंदर- सभ्य

(5) गाँव की क्या परंपरा थी?

   (क) अपने गाँव के युवक से संबंध - निषेध की

   (ख) दूसरे गाँव के युवक से संबंध - निषेध की

   (ग) तताँरा जैसे युवक के साथ संबंध - निषेध की

   (घ) याचक जैसे युवक के साथ संबंध - निषेध की

IV. **<u>कला एकीकृत परियोजना : एक भारत श्रेष्ठ भारत</u>** (Group Activity)

भारत के किसी एक राज्य के बारे में जानकारी (भूगोल, मानचित्र, इतिहास, जनसंख्या, सामाजिक जीवन, अर्थव्यवस्था, साक्षरता दर, जलवायु, वनस्पति एवं जीव, कृषि, त्योहार, कला, संगीत, नृत्य, शिक्षा, वेश-भूषा, खान-पान, परिवहन, उद्योग, पर्यटन स्थल आदि) देते हुए उनसे संबंधित चित्र सहित परियोजना तैयार कीजिए।

(Make it colourful with illustrations, border work and cover page.)

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Name: _____

Class X&Divn.: _____ 　　　　　　　　　　Prepared by 　　　　: Santhosh M

Date: 11__/_06__/2023 　　　　　　　　　　Date of Submission :13. 08.2023

Subject:Malayalam

1　അംഗവാക്യം, അംഗിവാക്യംഇവവേർതിരിച്ചെഴുതുക

　1.കോയമ്പത്തൂരിലേക്കുള്ള വണ്ടി നേരത്തേ വരുകയാൽ ബെഞ്ചിൽ
　സമീപത്തിരുന്ന കാരണവർ എഴുന്നേറ്റ് പോയി.

ഉ:

　2. ഒരു പേറ്റിച്ചിയെപ്പോലെ തന്റെ മകന്റെ ദേഹത്തെ വെള്ളായിയപ്പൻ
　പാറാവുകാരിൽ നിന്ന് ഏറ്റുവാങ്ങി

ഉ:

　3. പ്രയോഗംമാറ്റുക

　1 വെള്ളായിയപ്പൻ　കടലാസ് പാറാവുകാരനെ ഏൽപ്പിച്ചു.

ഉ:

4. അർത്ഥവ്യത്യാസം വരാതെ വിധിവാക്യത്തെ നിഷേധവാക്യമാക്കി മാറ്റുക

　1. മേധാവികൾ കടലാസ് പരിശോധിക്കുന്നു.

ഉ:

　2.പുറത്തേക്കു നോക്കിക്കൊണ്ട് അപരിചിതനായി കണ്ടുണ്ണി നിന്നു.

ഉ:

5. സ്കൂളുകൾ കേന്ദ്രീകരിച്ചുള്ള മയക്കുമരുന്നു മാഫിയയുടെ പ്രവർത്ത
　നത്തെ നിയന്ത്രിക്കണമെന്നാവശ്യപ്പെട്ടുകൊണ്ട് വിദ്യാഭ്യാസമന്ത്രിക്ക്
　കത്ത് തയ്യാറാക്കുക

6. മഴക്കാലശുചികരണപ്രവർത്തനം നടത്തിയ യുവജനക്കൂട്ടായ്മയെ

അഭിനന്ദിച്ചുകൊണ്ട് കോർപ്പറേഷൻ ചെയർമാൻ എന്ന നിലയിൽ
കത്ത് തയ്യാറാക്കുക

7. വീടില്ലാത്ത കുട്ടിക്ക് സ്കൂൾ കുട്ടികളും അധ്യാപകരും ചേർന്നുകൊണ്ട്
വീടുനിർമ്മിച്ചു നൽകി പത്രവാർത്ത തയ്യാറാക്കുക

8.ഉപന്യസിക്കുക

1. ബാലവേല തടയേണ്ടതിന്റെ ആവശ്യകത

2. പത്രദൃശ്യമാധ്യമങ്ങളും ഇന്നത്തെ സമൂഹവും

3. ശാസ്ത്രസാങ്കേതികരംഗങ്ങളിലെ കണ്ടുപിടുത്തങ്ങളും ആധുനിക
സമൂഹവും

4. പ്രകൃതിസംരക്ഷണത്തിന്റെ ആവശ്യകത

9. ഉത്തരമെഴുതുക

1. കടൽത്തീരത്ത് എന്ന കഥയ്ക്ക് ആസ്വാദനക്കുറിപ്പ് തയ്യാറാക്കുക

2. അമ്മത്തൊട്ടിൽ എന്ന കവിതയുടെ പ്രമേയം ഇന്നത്തെ സമൂഹത്തി
ലും ആവർത്തിക്കുന്നുണ്ടോ ? സമർത്ഥിക്കുക

3. ജീവിതത്തിലെ നശ്വരത ശ്രീരാമൻ ലക്ഷ്മണനെ ബോധ്യപ്പെടുത്തുന്ന
തെങ്ങനെ ? വിവരിക്കുക

Class: X

Sub:MATHEMATICS

1.Solve the following quadratic equations by quadratic formula:
   (i) $4x^2 - x - 14 = 0$ (ii) $9x^2 + 6x - 8 = 0$ (iii) $8x^2 + 11x - 10 = 0$
   (iv) $10 x^2 - 19x + 7 = 0$ (v) $16x^2 - 10x - 9 = 0$

2.Solve the following quadratic equations by factorisations:

   (i) $\sqrt{3}x^2 + 10x + 7\sqrt{3} = 0$ (ii) $\sqrt{2}x^2 + 7x + 5\sqrt{2} = 0$ (iii) $\sqrt{2}x^2 - 3x - 2\sqrt{2} = 0$
   (iv) $4\sqrt{3}x^2 + 5x - 2\sqrt{3} = 0$ (v)$\sqrt{3}x^2 - 2\sqrt{2}x - 2\sqrt{3} = 0$

3.Solve:
$$\frac{1}{a + b + x} = \frac{1}{a} + \frac{1}{b} + \frac{1}{x}$$

4. Find the discriminant of the following quadratic equations:
   (i) $\sqrt{3}x^2 + 10x + 7\sqrt{3} = 0$ (ii) $\sqrt{2}x^2 + 7x + 5\sqrt{2} = 0$ (iii) $9x^2 + 10x - 16 = 0$

   (iv) $10x^2 + x - 2 = 0$ (v)$\sqrt{3}x^2 - 2\sqrt{2}x - 2\sqrt{3} = 0$

5.Find the nature of the roots:
   (i) $\sqrt{3}x^2 + 10x + 7\sqrt{3} = 0$ (ii) $\sqrt{2}x^2 + 7x + 5\sqrt{2} = 0$ (iii) $9x^2 + 10x - 16 = 0$

   (iv) $10x^2 + x - 2 = 0$ (v)$\sqrt{3}x^2 - 2\sqrt{2} x - 2 \sqrt{3} = 0$

6. 9.If the following quadratic equations have two equal roots find the value of k in each case:
   (i) $x^2 + 2x + (k+1) = 0$ (ii) $9x^2 + 6x - 8 = 0$

   (iii) $8x^2 + 11x - 10 = 0$ (iv) $10 x^2 - 19x + 7 = 0$

   (v) $16x^2 - 10x - 9 = 0$

7.Find the value of k for which the equation $x^2 + 2kx + (k^2 - k + 2) = 0$ has real and equal roots.

8.If $- 5$ is a root of the quadratic equation $2x^2 + p x - 15 = 0$ and the quadratic equation
   $p(x^2 + x) + k = 0$ has equal roots, find the value of k.

9.If the equation $(1 + m^2) x^2 + 2mcx + c^2 - a^2 = 0$ has equal roots, show that $c^2 = a^2 (1 + m^2)$.

10.If the roots of the equation $(a - b)x^2 + b - c) x + (c - a) = 0$ are equal. Prove that $2a = b + c$.

11.Solve:
   (i) $5x + \dfrac{5}{16x} = 2$ (ii) $2x - \dfrac{3}{x} = 5$

   (iii) $2x + \dfrac{4}{x} = 9$ (iv) $y - \dfrac{3}{y} = 2$

12.Solve:
   (i) $\dfrac{x + 4}{x - 4} - \dfrac{x - 4}{x + 4} = \dfrac{80}{9}$ (ii) $\dfrac{1}{x} + \dfrac{1}{15 - x} = \dfrac{3}{10}$

QUADRATIC EQUATIONS – STATEMENT PROBLEMS

1. A two digit number is four times the sum of the digits. It is also equal to 3 times the product of digits.Find the number.

2. Three consecutive natural numbers are such that the square of the middle number exceeds the difference of the squares of the other two by 60.Find the numbers.

3. A motor boat whose speed is 20 km/h in still water, takes 1 hour more to go 48 km upstream than to return downstream to the same spot.Find the speed of the stream.

4. The diagonal of a rectangular field is 16 metres more than the shorter side. If the longer side is 14 metres more than the shorter side, then find the lengths of the sides of the field.

5. In a flight of 600 km, an aircraft was slowed down due to bad weather.Its average speed for the trip was reduced by 200 km/hr from its usual speed and the time of the flight increased by 30 min. Find the scheduled duration of the flight.

6. In a flight of 2800 km, an aircraft was slowed down due to bad weather. Its average speed is reduced by 100 km/h and time increased by 30 minutes. Find the original duration of the flight.

7. Some students planned a picnic. The total budget for food was ₹ 2,000. But 5 students failed to attend the picnic and thus the cost of food for each member increased by ₹ 20. How many students attended the picnic and how much did each student pay for the food.

8. In a class test, the sum of the marks obtained by P in mathematics and science is 28. Had he got 3 more marks in mathematics and 4 marks less in science, the product of marks obtained in the two subjects would have been 180. Find the marks obtained by him in the two subjects separately.

9. A person wishes to fit three rods together in the shape of a right triangle. The hypotenuse is to be 2 cm longer than the base and 4 cm longer than the altitude. What should be the lengths of the rods?

10. Sum of the areas of two squares is 400 cm^2. If the difference of their perimeters is 16 cm, find the sides of the two squares.

11. The difference between squares of two numbers is 120. The square of smaller number is twice the greater number. Find the numbers.

12. In a class test, the sum of Kamal's marks in mathematics and English is 40. Had he got 3 marks more in mathematics and 4 marks less in English, the product of the marks would have been 360. Find his marks in two subjects separately.

13. Seven years ago Varun's age was five times the square of Swati's age. Three years hence, Swati's age will be two- fifth of Varun's age. Find their present ages.

14. Three consecutive natural numbers are such that the square of the middle number exceeds the difference of the squares of the other two by 60. Find the numbers.

15. A plane left 30 minutes late than its scheduled time and in order to reach the destination 1500 km away in time, it had to increase its speed by 100 km/h from the usual speed. Find its usual speed.

16. A motor boat whose speed is 24 km/h in still water takes 1 hour more to go 32 km upstream than to return downstream to the same spot. Find the speed of the stream.

17. In the centre of a rectangular lawn of dimensions 50 m x 40 m, a rectangular pond has to be constructed so that the area of the grass surrounding the pond would be 1184 m2 [see Figure]. Find the length and breadth of the pond.
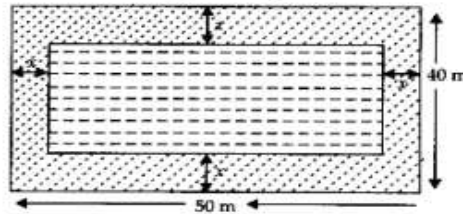
18. The product of the ages of Cally and Katty is 130 less than the product of their ages in 5 years. If Cally is 3 years older than Katty, what are their current ages?

19. The difference of the squares of two numbers is 180. The square of the smaller number is 8 times the greater number. Find the two numbers.

20. A train, travelling at a uniform speed for 360 km, would have taken 48 minutes less to travel the same distance if its speed were 5 km/h more. Find the original speed of the train.

COORDINATE GEOMETRY

1. 1.If (3,5), (6,7) and (2,9) are the three vertices of a parallelogram, find its fourth vertex.
2. If (1, 2),(4, y),(x, 6) and (3,5) are the vertices of a parallelogram taken in order,find x and y.
3. Find the ratio in which y-axis divides the line-segment joining the points A(5, -6) and B(-1, 4). Also, find the coordinates of the point of division.
4. Find the ratio in which the line-segment joining the points P (3, -6) and Q (5,3) is divided by the x-axis.
5. Write the coordinates of a point on x-axis which is equidistant from the points (-3, 4) and (2, 5).
6. Write the coordinates of a point on y-axis which is equidistant from the points A(6, 5) and (-4,3).
7. Find the value of y for which the distance between the points P(2,-3) and Q(10, y) is 10 units.
8. Find the possible values of k,if the distance between the points P(4,k) and Q(1,0) is 5 units.
9. Find the coordinates of the point which divides the line-joining of (- 1, 7) and (4, – 3) in the ratio 2 : 3.
10. Find the coordinates of the points of trisection of the line-segment joining (4, – 1) and (-2,-3).
11. Show that the points A(-1, -2), B(1, 0), C(-1, 2) and D(-3, 0) form a square.
12. Prove that the points A(2, -1), B(3, 4), C(-2, 3) and D(-3, -2) are the vertices of a rhombus.
13. Show that the points A(4, 3), B(-1, -2) and C(3, 4) are the vertices of a right triangle.
14. If the points A(4, 7), B(p,3) and C(7,3) are the vertices of a right triangle, find the value of p.
15. Show that the points A(a,a), B(-a, -a) and C(-√3 a, √3 a) are the form an equilateral triangle.
16. how that the points (-2, 3), (8, 3) and (6, 7) are the vertices of a right triangle.
17. Prove that the diagonals of a rectangle ABCD, with vertices A(2, -1), B(5, -1), C(5, 6) & D(2,6), are equal and bisect each other.

18. Find the relation between x and y if the point (x,y) is equidistant from the (7,1) and (3,5).

19. If the point (x,y) is equidistant from the points (5,1) and (-1,5),prove that $3x = 2y$.

20. Find the ratio in which the point (-4,6) divide the line-segment joining the points P (-6,10) and Q (3,-8).

21. Find the area of the rhombus whose vertices are A(3,0), B(4,5), C(-1, 4) and D(-2,-1).

22. A(5, 1), B(1, 5) and C(-3,-1) are the vertices of ∆ABC, find the length of the median AD.

23. Find the coordinates of the centroid of the triangle whose vertices are (-2, 3), (8, 3) and (6, 7).

24. If the centroid of the triangle whose two vertices are (-2, 3)and (6, 7),find the third vertex.

25. If the point C(-1,2) divides internally the line-segment joining the points A(2,5) and B(x,y) in the ratio 3:4, find the value of $x^2 + y^2$.

COORDINATE GEOMETRY

CASE STUDY QUESTIONS:

1. The class X students school in krishnagar have been allotted a rectangular plot of land for their gardening activity. Saplings of Gulmohar are planted on the boundary at a distance of 1 m from each other. There is triangular grassy lawn in the plot as shown in the figure. The students are to sow seeds of flowering plants on the remaining area of the plot.
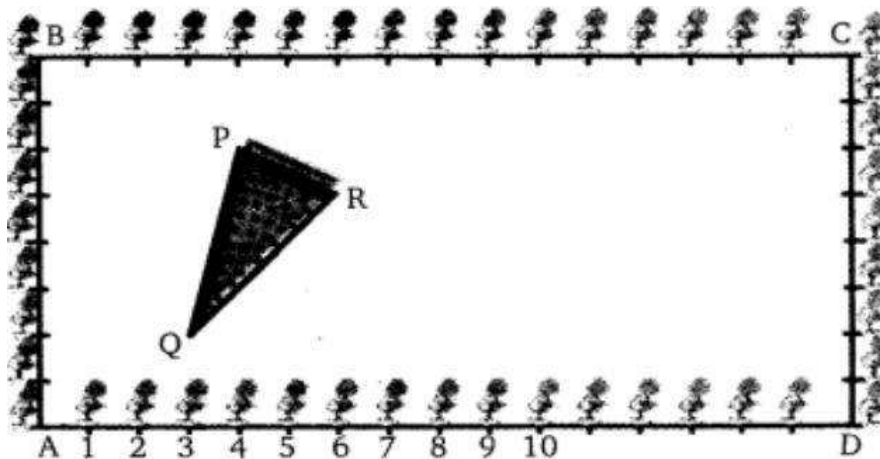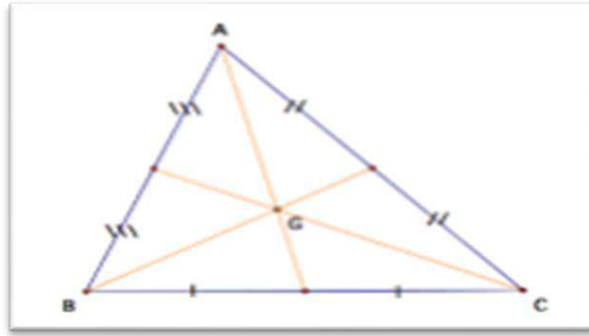

Based on the above information answer the following questions:

(i).Taking A as origin, find the distance of P from the origin.

(ii).Find the mid-point of the line-segment PQ.

(iii).Find the length of PR.
        OR
    Check whether PQ = QR.

2. In a triangle centroid is the point of intersection of all the three medians. The median is a line that joins the mid-point of a side and the opposite vertex of the triangle. The centroid of the triangle divides the median in the ratio of 2 : 1. If the points (1,2), (4,-2) and (-3,-5) are the vertices of A ,B and C respectively of the triangle ABC. G is the centroid of the triangle.

Based on the above information answer the following questions:

(i)Find the mid-point of the side AC.

(ii)Find the length of BC.

(iii)Find the coordinates of G.(Using Section Formula – G divides Median in the ratio 2:1)

OR

Find the coordinates of G.(Using Centroid formula

3.Alia and Shagun are friends living on the same street in Patel Nagar. Shaguns house is at the intersection of one street with another street on which there is a library. They both study in the same school and that is not far from Shagun's house.
Suppose the school is situated at the point O, i.e., the origin, Alia's house is at A. Shaguns house is at B and library is at C. Based on the above information, answer the following questions.
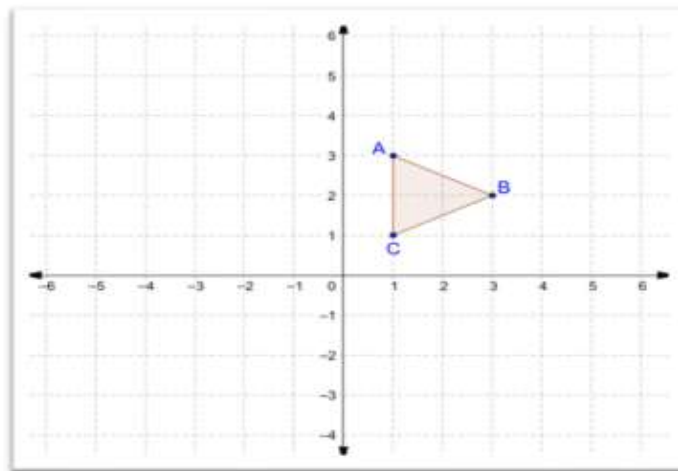

(i)How far is Alia's house from Shaguns house?

(ii)How far is the library from Shaguns house?

(iii)Check whether AB = AC.

OR

What type of triangle is ABC?

4. In a GPS, The lines that run east-west are known as lines of latitude, and the lines running north-south are known as lines of longitude. The latitude and the longitude of a place are its coordinates and the distance formula is used to find the distance between two places. The distance between two parallel lines is approximately 150 km. A family from Uttar Pradesh planned a round trip from Lucknow (L) to Puri (P) via Bhuj (B) and Nashik (N) as shown in the given figure below.
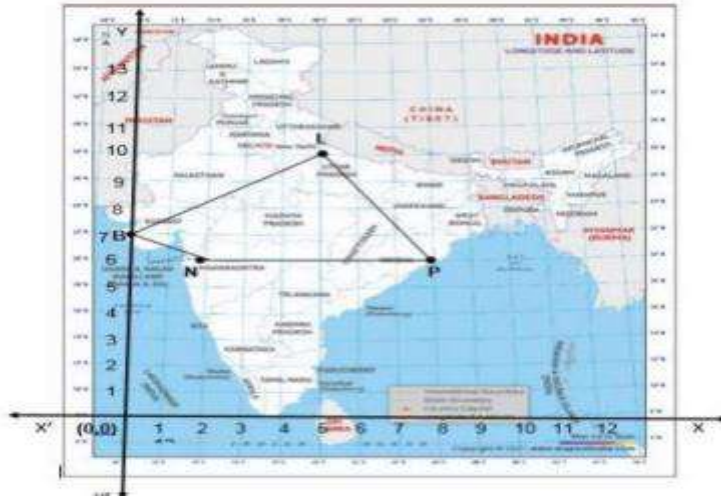
Based on the above information answer the following questions using the coordinate geometry.

(i).Find the distance between Lucknow (L) to Bhuj(B).

(ii).If Kota (K), internally divide the line segment joining Lucknow (L) to Bhuj (B) in the ratio 3 : 2, then find the coordinate of Kota (K).

(iii).Name the type of triangle formed by the places Lucknow (L), Nashik (N) and Puri (P).

OR

Find a place (point) on the longitude (y-axis) which is equidistant from the points Lucknow (L) and Puri (P).

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SURFACE AREAS AND VOLUMES

1.Due to heavy floods in a state, thousands were rendered homeless. 40 schools collectively decided to provide place and the canvas for 100 tents and share the whole expenditure equally. The lower part of each tent is cylindrical with base radius 2.8 m and height 3.5 m and the upper part is conical with the same base radius, but of height 2.1 m. If the canvas used to make the tents costs ₹40 per m^2, find the amount shared by each school to set up the tents.

(i)Find the slant height of the conical part of the tent.
(ii)Find the area of canvas required for each tent.
(iii)Find the total cost of canvas for 100 tents.
(iv)Find amount of shared by each school for the tent.

2.There are two identical solid cubical boxes of side 7cm. From the top face of the first cube a hemisphere of diameter equal to the side of the cube is scooped out. This hemisphere is inverted and placed on the top of the second cube's surface to form a dome.
Find (i) the ratio of the total surface area of the two new solids formed.
(ii) volume of each new solid formed. ($\pi = 3.14$)
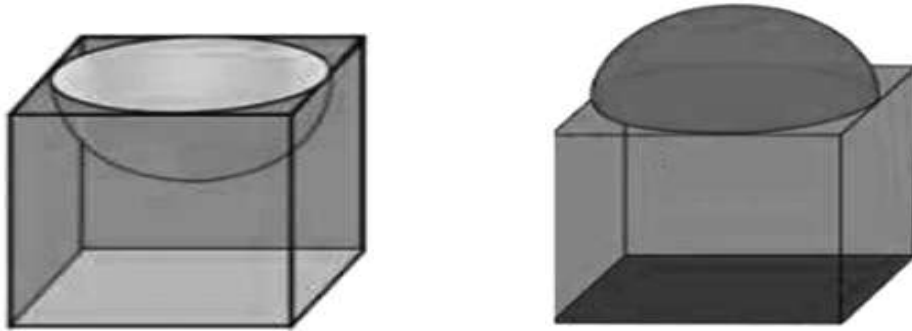
3.Adventure camps are the perfect place for the children to practice decision making for themselves without parents and teachers guiding their every move. Some students of a school reached for adventure at Sakleshpur.At the camp, the waiters served some students with a welcome drink in a cylindrical glass of radius 3.5 cm and 10.5 cm and some students in a hemispherical cup whose diameter is 7 cm.After that they went for a jungle trek. The jungle trek was enjoyable but tiring. As dusk fell, it was time to take shelter. Each group of four students was given a canvas of area 551m².Each group had to make a conical tent to accommodate all the four students. Assuming that all the stitching and wasting incurred while cutting, would amount to 1m²,the students put the tents.The radius of the tent is 7m. Find:

      (i)volume of the welcome drink in each shape of cup.

      (ii)the slant of the conical tent.

      (iii)the volume of air in each tent.
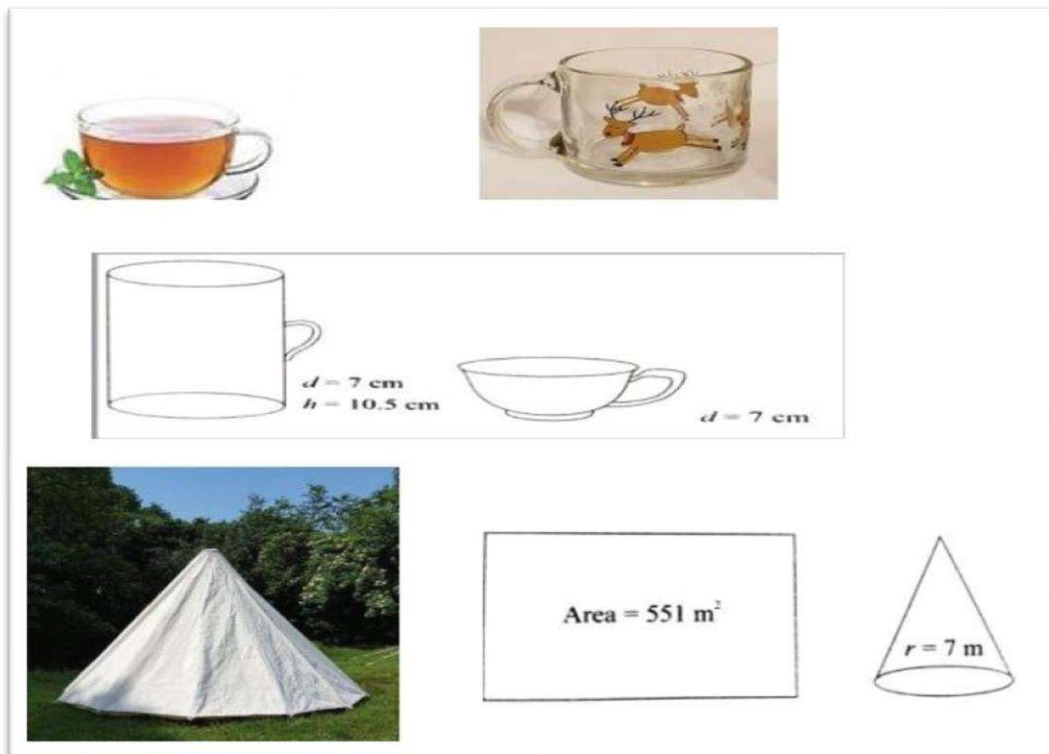
4.One day Rinku was going home from school, saw a carpenter working on wood. He found that he is carving out a cone of same height and same diameter from a cylinder. The height of the cylinder is 24 cm and base radius is 7 cm. While watching this, some questions came into Rinkus mind. Help Rinku to find the answer of the following questions.
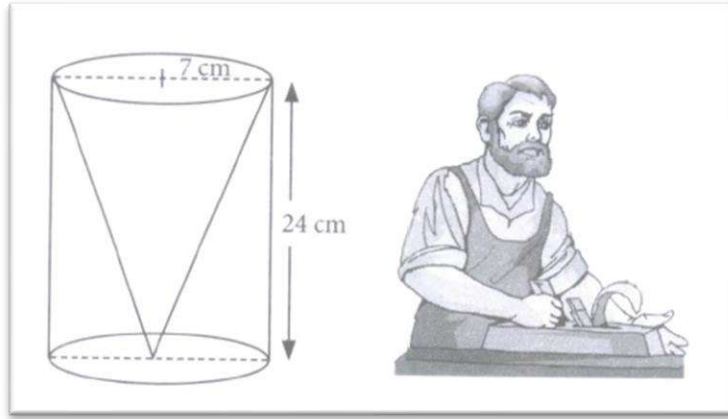
(i)Find the slant height of the conical cavity so formed.

(ii)Find the curved surface area of the conical cavity so formed.

(iii)Find the external curved surface area of the cylinder.

(iv)Find the total surface area of the remaining solid

(v)Find the volume of the remaining solid.

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Chemistry

Write all the balanced chemical equations from chapter 1- Chemical reactions and equations and Chapter 2 - Acids, bases and salts.

Physics

Ray diagrams of spherical mirrors and lenses

History

Interdisciplinary Project as part of Multiple Assessments – Chapter 3: The Making of Global World

Geography

IDP- Chapter 7: Lifelines of National Economy- Transport & Communication

Economics

IDP- Project on Globalisation