

SAMPLE PAPER

Class IX

UT III

Social Studies

M.M:80

- 1.Name the countries against which Germany fought the first world war. 1
- 2.Who was Gunda Dhur? 1
- 3.What are the thunderstorms called in West Bengal? 1
- 4.What is called a Biome? 1
- 5.What is called the preamble of the Constitution? 1
- 6.For how many days can the Rajya Sabha delay the money bill? 1
- 7.What is meant by the factor of production? 1
- 8.Which are the three major Himalayan rivers? 1
- 9.Write a short note on Shifting Cultivation. 3
- 10.Why do we need Elections? 3
- 11.Mention three features of the Central Highlands. 3
- 12.What is bio-reserve? Give two examples. 3
- 13.What compromises did the blacks and whites make? 3
- 14.Give arguments in favour of democracy. 3
- 15.On what terms did Savita get a loan from Tejpal Singh? Would Savita's Condition be different if she could get a loan from the bank at a low rate of interest. 3
- 16."Unemployment give birth to various socio-economic problems."Give three arguments to support this statement. 3
17. Differentiate between Physical capital and Human capital. 3

18. What do you know about Bloody Sunday? What is its significance in history of Russia? 5
19. What is deforestation? Mention the causes of deforestation in India during the Colonial period. 5
20. Discuss the Mechanism of Monsoon. 5
21. Describe different types of vegetation found in India : 5
- i. Tropical Evergreen forests
  - ii. Tropical Deciduous forests
  - iii. Tropical Thorn forests and Scrubs
  - iv. Montane Forests
  - v. Mangrove Forests
22. Describe the different stages of elections in India. 5
23. Why is there a demand that UN should be more democratic? 5
24. What are the social indicators of poverty as seen by social scientists? 5
25. How can poverty be reduced in future in India? 5
26. On an outline map of India, label the following: 3
- i. Areas of evergreen forests
  - ii. Areas of dry deciduous forests
  - iii. Two national parks
27. On the same map locate: 2
- i. Bastar
  - ii. Dehradun



## UT-III SAMPLE PAPER

### CLASS – IX

### SCIENCE

**Time allowed: 3 hours**

**M.M: 80**

#### **General Instructions:**

- (i) All questions are compulsory.
- (ii) There is no choice in any of the questions.
- (iii) Question numbers 1 to 2 are one mark questions. These are to be answered in one word or one sentence.
- (iv) Question numbers 3 to 5 are two marks questions. These are to be answered in about 30 words each.
- (v) Question numbers 6 to 15 are three marks questions. These are to be answered in about 50 words each.
- (vi) Question numbers 16 to 21 are five marks questions. These are to be answered in about 70 words each.
- (vii) Question numbers 22 to 27 are two marks questions based on practical skills. These are to be answered in brief.

1. Name any two fodder crops.
2. What is endocytosis? What is atomicity? Name one diatomic molecule.
3. Why is epidermis present as a thick waxy coating of cutin in desert plants?
4. Define pressure? Why the pointed nail gets inserted easily in the wall?
5. Calculate the number of molecules of sulphur ( $S_8$ ) in 64 g of sulphur.  
Given atomic mass of S = 32u. Avogadro number =  $6.022 \times 10^{23}$ .
6. Which of the following will show "Tyndal Effect" & Why ?  
  
a) Salt Solution                      b) Milk      c) Starch Solution
7. List out three differences between mixtures and compounds.
8. What are the different means by which infectious diseases are spread?
9. What is the mechanism of action of antibiotics?
10. Write a note on Golgi apparatus and the functions it performs.

11. Distinguish between
  - a) Inland fisheries and marine fisheries
  - b) Culture fisheries and Capture fisheries
  - c) Apiculture and Aquaculture
12. The moon is acted by gravitational pull of earth, still it does not fall on the earth. Explain why? Determine the ratio of weight of an object of mass 50 kg on earth and on moon.
13. Prove that the rate of change of momentum is directly proportional to the applied force.
14. A coolie lifts a box of 15 Kg from the ground to a height of 2.0 m. Calculate the work done by the coolie on the box.
15. Write three characteristics of particles of matter.
16. How are sol, solution and suspension different from each other? List out five points for each one.
17. Explain :
  - (a) why is ice at 273K more effective in cooling than water at the same temperature.
  - (b) What produces more severe burns, boiling water or steam and why?
18. Name the diseases caused by the following :-
  - a) Protozoa
  - b) Virus
  - c) Bacteria
  - d) Fungi

How is malaria transmitted?
19. Differentiate between striated, unstriated and cardiac muscles on the basis of their structure and site/location in the body.
20. (a) Show that when a body is dropped from a certain height, the sum of its kinetic and potential energy at any instant during its free fall is constant.  
(b) How many joules make one kilowatt hour ?
21. (a) Define acceleration and write its S.I unit.  
(b) Prove Newton's second law of motion graphically.
22. Which separation techniques will you apply for the separation of the following ?
  - (a) Sodium chloride from its solution in water.

- (b) Ammonium chloride from a mixture containing sodium chloride and ammonium chloride.
  - (c) Iron pins from sand.
  - (d) Wheat grains from husk
23. A mixture of iron filings and sulphur is heated in a hard glass test tube. What observations you will make? Write the balanced chemical reaction involved.
24. Which is the better mounting medium water or glycerin and why?
25. A student put 5 raisins each in 2 beakers A and B. Beaker A contained 50ml of distilled water and beaker B has 50ml of saturated sugar solution. After sometime what would he observe?
26. Illustrate the law of conservation of energy by discussing the energy changes which occur when we draw a pendulum bob to one side and allow it to oscillate. Why does the bob eventually come to rest? What happens to its energy eventually? Is it a violation of the law of conservation of energy ?
27. You have a bag of cotton and an iron bar, each indicating a mass of 100 Kg when measured on a weighing machine. In reality, one is heavier than other. Can you say which one is heavier and why ?

**UT-2 SAMPLE PAPER**

**CLASS IX**

**Information Technology (402)**

**Time: 2 Hours**

**Max.Marks:50**

**SECTION-A**

**Multiple choice question /Fill in the blanks/ Direct Questions:**

**(1 x 10=10)**

1. The \_\_\_\_\_ option is used to see how the document will look like when it will be printed.
2. The spreadsheet feature used to continue the series is called as \_\_\_\_\_.
3. Del key deletes the character at the \_\_\_\_\_ cursor position.
4. Pressing the end key moves the cursor to the \_\_\_\_\_ character of the line.
5. \$A1\$B2 is an example of \_\_\_\_\_referencing in spreadsheet software.
6. To check the grammar we should go to which of the following menus?
  - a) Tools menu
  - b) View menu
  - c) Insert menu
  - d) Edit menu
7. Which of the following methods are used to receive information from the sender through a letter?
  - a) Listening
  - b) Speaking
  - c) Reading
  - d) Writing
8. Why do we send emails?
  - a) To reach on time
  - b) To talk to each other
  - c) To share documents
  - d) To met each other
9. What does GPS stands for
  - a) Global Positioning system

- b) Global Payment system
- c) Global Program system
- d) Global Pointing system

10. What are some of the environment changes caused due to modern methods of agriculture?

- a) Chemical pollution due to fertilizers .
- b) Improvement in the environment
- c) Lower air pollution due to crops
- d) Decrease in forest areas

**Very short Answer Question**

**(5 x 2=10)**

1. List the various components of Libre Office suite.
2. Write the use of ICT in diagnosis.
3. List any two characteristics of wage management.
4. Explain Green Skills.
5. What do you mean by assertive sentences?

**Short Answer Question**

**(5 x 3=15)**

1. Write the difference between spreadsheet, worksheet and sheet.
2. Explain the role of typing ergonomics.
3. Which are the prominent areas where IT is used in science and engineering?
4. Describe any three methods of water conservation.
5. Write down the different types of verbal communication. Give example of each.

**Long Answer Question**

**(5 x 5=25)**

1. Explain the elements of communication cycle with diagram.
2. List the steps to search for information using a web browser.
3. Explain entrepreneurship in brief and its various benefits.
4. Define pollution and the sources of pollution.
5. What is the importance of password in document? How will you protect the document using password in Writer?

## आदर्श प्रश्न पत्र

### इकाई परीक्षा 3

#### कक्षा नौवीं

#### विषय हिंदी

समय— 3 घंटे

अंक— 80

सामान्य निर्देश —

1. इस प्रश्न-पत्र के तीन खण्ड हैं— क, ख, ग और घ।
2. सभी प्रश्नों के उत्तर देना अनिवार्य है।
3. शब्द सीमा को ध्यान में रखते हुए उत्तर दीजिए।
4. लेख एवं वर्तनी पर विशेष ध्यान दीजिए।
5. सभी प्रश्नों के उत्तर क्रमानुसार ही लिखिए।

#### खंड 'क'

प्र. 1 निम्नलिखित गद्यांश को पढ़कर पूछे गए प्रश्नों के उत्तर दीजिए।

मनुष्य जीवन की सबसे बड़ी सिद्धि अपने अहं के संपूर्ण त्याग में है। जहां वह शुद्ध समर्पण के उदात्त भाव से प्रेरित होकर अपने स्व का त्याग करने को प्रस्तुत होता है वहीं उसके व्यक्तित्व की महानता परिलक्षित होती है। साहित्यानुरागी जब उच्च साहित्य का रसास्वादन करते समय स्वयं की सत्ता को भुलाकर पात्रों के मनोभावों के साथ एकत्व स्थापित कर लेता है तभी उसे साहित्यानंद की दुर्लभ मुक्तामणि प्राप्त होती है। भक्त जब अपने आराध्य देव के चरणों में अपने आप को अर्पित कर देता है और पूर्णतः प्रभु की इच्छा में अपनी इच्छा को लय कर देता है तभी उसे प्रभु-भक्ति की अलभ्य पूँजी मिलती है। यह विचित्र विरोधाभास है कि कुछ और प्राप्त करने के लिए स्वयं को भूल जाना ही एक मात्र सरल और सुनिश्चित उपाय है। यह अत्यंत सरल दिखने वाला उपाय अत्यंत कठिन भी है। भौतिक जगत में अपनी क्षुद्रता को समझते हुए भी मानव हृदय अपने अस्तित्व के झूठे अहंकार में डूबा रहता है। उसका त्याग कर पाना उसकी सबसे कठिन परीक्षा है। किंतु यही उसके व्यक्तित्व की चरम उपलब्धि भी है। दूसरे का निःस्वार्थ प्रेम प्राप्त करने के लिए अपनी इच्छा-आकांक्षाओं और लाभ-हानि को भूलकर उसके प्रति सर्वस्व समर्पण ही एकमात्र माध्यम है। इस प्राप्ति का अनिवर्णनीय सुख वहीं घख सकता है जिसमें स्वयं को देना-लुटाया जाना हो। इस सर्वस्व समर्पण से उपजी नैतिक और चारित्रिक दृढ़ता, अपूर्व समृद्धि और परमानंद का सुख वह अनुरागी चित्त ही समझ सकता है जो - "ज्यों ज्यों बूढ़े श्याम रंग, त्यों त्यों उज्ज्वल होय"।

- क) मनुष्य जीवन की महानता किसमें है? लेखक ऐसा क्यों मानता है? 2
- ख) साहित्यानुरागी से क्या तात्पर्य है? उसे आनंद किस प्रकार प्राप्त होता है? 2
- ग) प्रभु-भक्ति की पूँजी कैसे बताई गई है और भक्त उसे कब प्राप्त कर सकता है? 2

घ) मनुष्य के व्यक्तित्व की चरम उपलब्धि क्या है?	1
ड) विचित्र विरोधाभास किसे माना गया है? और क्यों।	2
च.) 'साहित्यान्तरागी' शब्द का संधि विच्छेद कीजिए।	1

प्रश्न 2 निर्देशानुसार उत्तर दीजिए।

क) वर्ण विच्छेद कीजिए—विश्राम प्राकृतिक	2
ख) उचित स्थान पर अनुस्वार का प्रयोग कीजिए—बसंत मनोरजन	1
ग) उचित स्थान पर अनुनासिक का प्रयोग कीजिए— महगाई, कुआ	1
घ) नुक्ता युक्त दो शब्द लिखिए।	1
ड) अप उपसर्ग से दो शब्द बनाइए।	2
च) मूल शब्द एवं प्रत्यय अलग-अलग कीजिए— चौगुना, कवित्व	2
छ) संधि विच्छेद कीजिए— उच्चारण, कृतार्थ	2
ज) संधि कीजिए— सोम + ईश, मंत्र + आलय	2
झ) उचित स्थान पर उपयुक्त विराम चिह्न लगाइए— 1 चंद्रधर ने पूछा यह क्या हो गया नत्थूराम जी 2 नेताजी ने कहा मुझे सब वोट देना 3 अरे कहीं बुखार भी झाड़ फूँक से उतरता है।	3
खंड—ग	
प्र 3 निम्नलिखित प्रश्नों के उत्तर दीजिए—	2+2+2
क) भगवाना अपने परिवार का निर्वाह कैसे करता था?	

ख) लोप सांग ने तंबू का रास्ता कैसे साफ किया?

ग) लेखिका ने अपने आप को एवरेस्ट शंकु की चोटी पर पहुँचकर सुरक्षित किस प्रकार किया?

प्र 4 अतिथि बोरियत का कारण कब बन जाता है? बोरियत की अभिव्यक्ति मेजबान के किन व्यवहारों से होने लगती है? 5

प्र 5 निम्नलिखित प्रश्नों के उत्तर दीजिए। 2+2+2

क) 'अब कैसे छूटे राम नाम रट लगी' में भगवान और भक्त की जिन जिन चीजों से तुलना की गई है, उनका उल्लेख कीजिए।

ख) रैदास ने 'गरीब निवाजु' किसे कहा है और क्यों?

ग) नट किस कला में सिद्ध होने के कारण ऊपर चढ़ जाता है?

प्र 6 आदमी नामा कविता के आधार पर आदमी के विभिन्न रूपों का उल्लेख करें। 5

प्र 7 निम्नलिखित प्रश्नों के उत्तर दीजिए।

क) लेखक और उसके साथियों द्वारा कुँए में डेला फेंका जाना और कुँए से आती क्रोधपूर्ण फुफकार पर हँसना, पशु-पक्षियों के प्रति बच्चों की शरारती प्रवृत्ति को प्रकट करती है। गिल्लू के प्राण बचाना इसके विपरीत प्रवृत्ति है। आप किस प्रवृत्ति को अपनाना चाहोगे और क्यों? 3

ख) गिल्लू के चरित्र की विशेषताएँ लिखिए। 3

खण्ड— घ

प्र 8 निम्नलिखित में से दिए गए बिंदुओं के आधार पर 80 से 120 शब्दों में अनुच्छेद लिखो। 6

क) इंटरनेट

- इंटरनेट क्या है?
- इसकी उपयोगिता
- इसकी हानियाँ

ख) मेरे सपनों का भारत

- मेरा सपना
- भारत की वर्तमान स्थिति

- भारत की महानता

ग) आलस्य मनुष्य का शत्रु

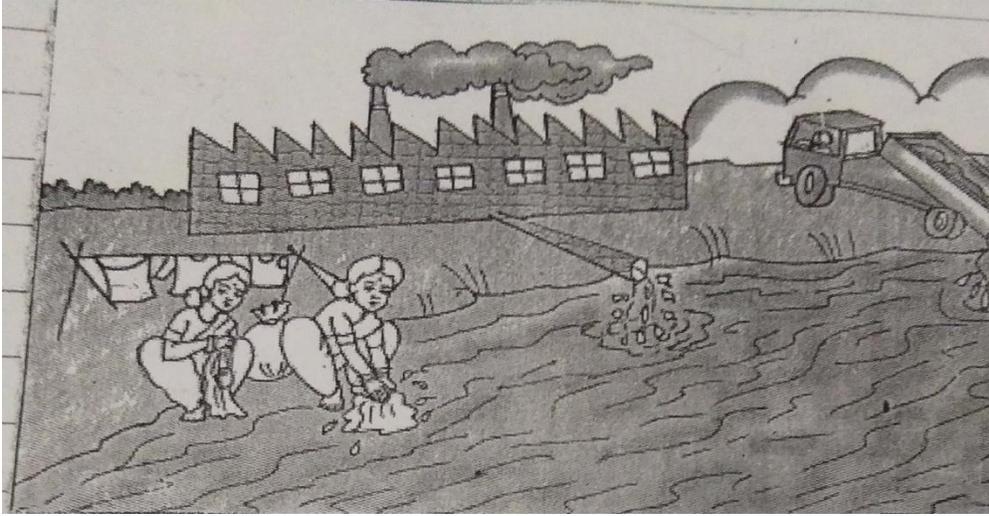
- आलस्य परम शत्रु
- सीखने की इच्छा खत्म
- दूसरों पर दोषारोपण करने से बचाव

प्र 9 मित्र को अपनी बड़ी बहन के विवाह का निमंत्रण देते हुए एक पत्र लिखिए। 5

प्र 10 हिंदी की मासिक पत्रिका हेतु 50से 60 शब्दों में विज्ञापन लिखिए। 5

प्र 11 शिक्षक दिवस के कार्यक्रम को लेकर विद्यार्थियों के बीच संवाद लिखिए। 5

प्र 13 नीचे दिए गए चित्र का वर्णन 50 से 60 शब्दों में कीजिए। 5



**SAMPLE PAPER**  
**EXAM – UNIT TEST 2**  
**CLASS – IX**  
**SUBJECT – ENGLISH**

**TIME: 3 HRS.**

**MM. 80**

**GENERAL INSTRUCTIONS**

- 1. All questions are compulsory.**
- 2. Your answer should be to the point, and strictly adhere to the prescribed word limit.**

**SECTION – A (READING)**

**(20m)**

**Q1. Read the following passage carefully:**

**12m**

The latest astounding discovery about music is that it helps students to learn in a much better way. Research in USA revealed how a group of three year old children who would take piano lessons were able to solve puzzles much better than those who were not musically active. The music learners could even draw geometrical figures and solve mathematical problems more efficiently and in a shorter time than those who did not learn music.

To facilitate the learning process, instrumental music proves much more useful. | Playing this music strengthens the synapses of the nerve cells that are important for logical thinking and reasoning.

Playing instrumental music involves the concentration of all the senses. Playing the violin or the flute becomes a type of meditation. The fingers and hands become more sensitive and skillful. Even one's posture improves. The mind and the senses are simultaneously stimulated. Learning music is like learning a new language. It opens up another form of expression.

Primarily, music involves the sense of hearing. Human hearing develops in the fetus at four weeks. The nerve system, the spinal cord and the brain of the fetus is formed by this time. The fetus in the womb can recognise its mother's voice. But by the twenty weeks, it can react to the sounds coming from outside too. By the twenty-fifth week, the

outer and the inner ear develop. Even the brain can process the acoustic signals by then. By the thirty-fifth week, the fetus can perceive and memorise melodies.

Remember the way in which, in the past, grannies would gently drum rhythms on the belly of a child. This includes a state of relaxation in the child. In such a trance- like state, the child could learn better what the granny would intend to teach. Music has an impact upon the human body. It influences human breathing, the heart- rate and the blood pressure.

Sometimes, absolute silence itself becomes a nuisance for the learner. In such a situation, even the mind starts its distracting whispers. In that case instrumental music played on a stereo, on a low volume works wonders for students. The mild neutral music masks the distracting silence.

The noise in the street often disturbs a learner. Here the masking effect of instrumental music can prove very useful. Various disturbing sounds are effectively masked with the soft instrumental music. This music acts as soothing balm to an upset mind and effectively relaxes tired nerves.

Much before this research in the USA, Lord Krishna would make the cows spell-bound by playing his musical flute. Today research reveals how playing the flute can relax milk glands, increasing the milk production. Kings of past would provide war music to boost the courage of fighting warriors. Martial tunes bolstered their morale and exhorted them to fight with renewed vigor.

**1.1 On the basis of the reading of the passage, answer the following questions as briefly as possible: (7m)**

- a) What two instances does the author quote to prove that music helps students to learn? 2
- b) How does instrumental music affect senses and help in learning? 2
- c) Mention the three ways in which music helps the human body? 1
- d) “Sometimes absolute silence itself becomes a nuisance.” Explain. 1
- e) How does music help the dairyman and soldiers? 1

**1.2 Find words from the passage which mean the same as the following: (3m)**

- 1. Surprising; causing amazement and wonder
- 2. Recognize or feel
- 3. Urged or encouraged

**1.3 Write the antonym of the following words:**

**(2m)**

a) Useful

b) Vigor

**Q2. Read the following passage carefully:**

**(8x1=8m)**

**TRUE GREATNESS**

1. Paderewsky was a rich man gifted with an ear for music. With his aptitude and with the help of tutors, in time, he became a great musician. He was a wizard with the violin. People thronged to hear his recitals, critics acknowledged him as a master violinist. He accepted the laurels heaped on him because he knew and realized the power of his music. Alas, success had made him proud. He felt that he was the only musician who could translate any emotion or render any tune on his violin. One day, while out on a morning walk in the woods he sat on a stone to admire nature. He felt that nature was all set to teach him a new tune of divine joy. The wind caused a gentle rustle of leaves and it seemed like the opening bars of a symphony. A few twigs fell, striking a strong note. There was a pause - a hush. Then a tiny sparrow started trilling a sweet song of gratitude to its maker, lifting its heart to heaven. The music of the swaying flowers and the enchanting song of the unassuming singer lulled and soothed the musician. It stirred the innermost recesses of his heart. He knew that he must render the same piece of music on his violin. The song ended and the bird flew away.
2. The musician jumped up, elated. He rushed home excited. What a great tune nature had presented to him. He would render it on his violin for his performance that very evening. Evening came and the music hall was packed. Paderewsky went on stage and bowed to the audience. The accompanist played the opening bars. People waited with bated breath to catch the first notes of the great master. The artist smiled loftily and drew his bow lightly across the strings. But something unexpected had happened. He had forgotten the song of the bird completely. The tune he had heard only that morning had gone out his mind. Irritated, he tried again but only succeeded in making a few screeching noises. The audience grew restless. Some even laughed. Paderewsky felt humiliated and angered. He flung the violin, it smashed against the wall and broke. Paderewsky looked up dejected. The hall was empty. He had paid a heavy price for his vanity. Tears flowing he realized that even the humble sparrow was greater than him. The greatness of a person is not measured by the talents he or she has. It is not measured by the position one holds. It is never measured by the popularity or clout one has. It is measured by one's humility and good deeds.

**2.1 In the following exercise, fill in the blanks with suitable words or phrases. (5m)**

a) People thronged to hear his recitals \_\_\_\_\_

b) Paderewsky did not ..... because he was conscious of the power of his music.

- c) As a result of his pride he assumed that he was the best musician who could...
- d) One day, while out on a morning walk he sat on a stone to admire nature which was all set to teach him a .....
- e) The two things that lulled and soothed the musician were

**2.2 Write the synonym of: (3m)**

- a) Popular
- b) Forgotten
- c) Gratitude

**SECTION – B (WRITING) (18m)**

**Q3.** Write a descriptive paragraph in about 100 – 150 words to describe sports day in your school where famous cricketer Virat Kohli was the chief guest. (8)

**Q4.** Write a story in about 150 – 200 words. Make your story interesting by including a setting, more characters, dialogues and a dramatic ending. (10)

It had been over two hours waiting for the train. Ruhi was getting restless suddenly she noticed a child begging at the platform.....

**SECTION – C (GRAMMAR) (10m)**

**Q5. Complete the passage using determiners. (4m)**

(a)\_\_\_\_\_ entire polling station seemed to be (b)\_\_\_\_\_ huge mass of humanity. It was (c)\_\_\_\_\_ public holiday. (d)\_\_\_\_\_ old man insisted on talking to be (e)\_\_\_\_\_ polling officer. He refused to show (f)\_\_\_\_\_ identity slip. (g) \_\_\_\_\_ people were surprised to see the old man pretending to be (h) \_\_\_\_\_ officer.

**Q6. In the passage below one word has been omitted in each line. Put a slash (/) where the word has been omitted. Write the missing word in the space provided. (4m)**

One thing we all must do to cooperate	a- _____
with police and pay heed to their advice.	b- _____
They warn us not touch unidentified,	c- _____
unclaimed suspicious objects like transistors,	d- _____
brief cases etc. we need watch out for	e- _____
abandoned cars, scooters report the	f- _____
details such objects to the nearest police	g- _____
control room dialing 100. One should	h- _____
not touch the objects till the bomb disposal squad arrives.	

**Q7. Rearrange the following into meaningful sentences. (4m)**

- a- left me/my/city/parents/her/with/they/in /went/live/when/to/the
- b- morning/to/wake/used/up /the/in/she/me
- c- said/in a /prayers/sings song/monotonous/morning/she/her
- d- listened/ I /loved /I/ voice /because/her

**SECTION – D (LITERATURE) (30m)**

**Q8. Answer the following questions that follow: (4m)**

**“Please give me a ride on your back!”**

**Said the Duck to the Kangaroo.**

**“I would sit still, and say nothing but ‘quack’,  
The whole of the long day through!”**

- a.) What does the Duck request the Kangaroo?
- b.) What does the Duck promise to do while travelling?
- c.) Write the rhyming words of the above extract.
- d.) Name the poem and the poet.

**Q9. Answer the following questions in about 30 – 40 words. Any five. (2x5=10)**

- a.) Give a character sketch of Abdul Kalam’s father.
- b.) How did Montmorency, add to the confusion during the packing?
- c.) Give example to show that Santosh was opposed to the traditional ways of life in her family?
- d.) How were the orphans and the widows resettled?
- e.) Behrman has a dream. What is it? Explain.
- f.) Why did the author often visit his old school? How did his old teachers encourage him?

**Q10. Answer the following in about 100 – 150 words. (8m)**

- a.) What are the various factors according to Kalam that make an individual’s character?

**OR**

How is the tree affected by hacking and chopping? What else is needed to kill a tree?

**Q11. Answer the following in about 100 – 150 words.**

**(8m)**

- a.) ‘The Last Leaf’ is a story about extreme sacrifice. Who makes this sacrifice and why?

**OR**

Schools are not just meant for imparting knowledge, they are also supposed to instill lasting human values. Write with reference to the story, ‘A House is Not a Home’



12. Find the area of a triangle two sides of which are 18cm and 10cm and the perimeter is 42cm.

### Section C

13. Simplify

(i)  $2^{\frac{2}{3}} \cdot 2^{\frac{1}{3}}$       (ii)  $16^{\frac{3}{4}}$       (iii)  $13^{\frac{1}{5}} \cdot 17^{\frac{1}{5}}$

14. Factorise:

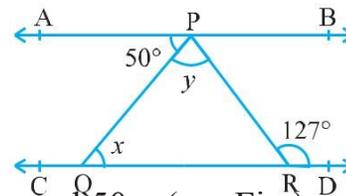
(i)  $12x^2 - 7x + 1$       (ii)  $2x^2 + 7x + 3$

15. Give possible expressions for the length and breadth of each of the following rectangles, in which their areas are given:

Area:  $25a^2 - 35a + 12$

16. The taxi fare in a city is as follows: For the first kilometer, the fare is Rs 8 and for the subsequent distance it is Rs 5 per km. Taking the distance covered as  $x$  km and total fare as Rs  $y$ , write a linear equation for this information, and draw its graph.

17. In given figure, if  $AB \parallel CD$ ,  $\angle APQ = 50^\circ$  and  $\angle PRD = 127^\circ$ , find  $x$  and  $y$ .



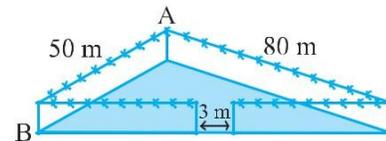
18. A triangular park ABC has sides 120m, 80m and 50m (see Fig.).

A gardener *Dhania* has to put a fence all around it and also plant grass inside.

How much area does she need to plant?

Find the cost of fencing it with barbed

wire at the rate of Rs 20 per metre leaving a space 3m wide for a gate on one side.

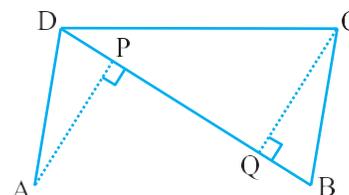


19. ABCD is a parallelogram and AP and CQ are perpendiculars from vertices A and C to diagonal BD (see Figure).

Show that

(i)  $\triangle APB \cong \triangle CQD$

(ii)  $AP = CQ$



20. P and Q are any two points lying on the sides DC and AD respectively of a parallelogram ABCD. Show that  $\text{ar}(\text{APB}) = \text{ar}(\text{BQC})$ .

21. The heights (in cm) of 9 students of a class are as follows:

155      160    145    149    150    147    152    144    148

Find the median of this data.

22. The record of a weather station shows that out of the past 250 consecutive days, its weather forecasts were correct 175 times.

(i) What is the probability that on a given day it was correct?

(ii) What is the probability that it was not correct on a given day?

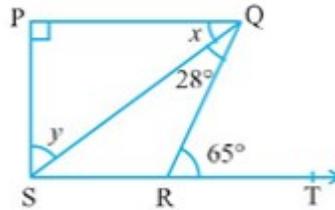
### Section D

23. Evaluate each of the following using suitable identities:

(i)  $(104)^3$

(ii)  $(999)^3$

24. In given figure, if  $PQ \perp PS$ ,  $PQ \parallel SR$ ,

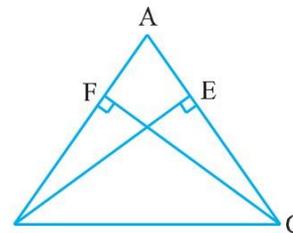


$\angle \text{SQR} = 28^\circ$  and  $\angle \text{QRT} = 65^\circ$ ,

then find the values of  $x$  and  $y$ .

25. A field is in the shape of trapezium whose parallel sides are 25 m and 10 m. The non-parallel sides are 14 m and 13 m. Find the area of the field.

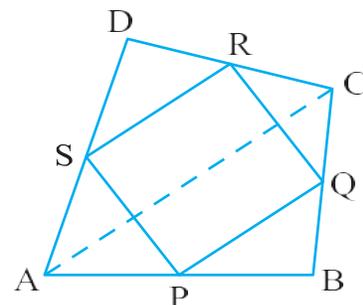
26. ABC is a triangle in which altitudes BE and CF to sides AC and AB are equal (see figure). Show that



(i)  $\Delta ABE \cong \Delta ACF$

(ii)  $AB = AC$

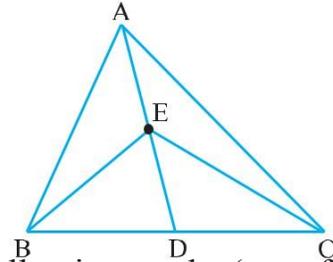
27. ABCD is a quadrilateral in which P, Q, R and S are mid points of the sides AB, BC, CD and DA (see figure). AC is a diagonal. Show that



(i)  $SR \parallel AC \wedge SR = \frac{1}{2} AC$

- (ii)  $PQ=SR$
- (iii) PQRS is a parallelogram.

28. In given figure, E is any point on median AD of a  $\Delta ABC$ . Show that  $ar(\Delta ABE)=ar(\Delta ACE)$ .



29. In a mathematics test given to 15 students, the following marks (out of 100) are recorded:

41 39 48 52 46 62 54 40 96 52 98 40 42 52 60

Find the mean, median and mode of this data.

30. Fifty seeds were selected at random from each of 5 bags of seeds, and were kept under standardized conditions favourable to germination. After 20 days, the number of seeds which had germinated in each collection were counted and recorded as follows:

Bag	1	2	3	4	5
Number of seeds germinated	40	48	42	39	41

What is the probability of germination of

- (i) More than 40 seeds in a bag?
- (ii) 49 seeds in a bag?
- (iii) More than 35 seeds in a bag?

.....XXX.....