

KV NO 1 ARMAPUR, KANPUR



WINTER BREAK ASSIGNMENT SECONDARY SECTION



KENDRIYA VIDYALAYA NO. 1 ARMAPUR, KANPUR

WINTER BREAK ASSIGNMENT

Winter vacation Holiday homework

Class VI

SUB ENGLISH

Q1 Write a paragraph on the following topics

A Myself

B My School

C Covid 19

D Importance of games and sports

Q2 find 20 verbs from your textbooks and write their three forms

Q3 find 20 adjectives from your textbooks and write their degrees

Q4 Write a letter to the Principal of your school for 4 days sick leave.

Q5 Write any 2 Lost Notices

Q6 Read the lessons already taught in the class.

Winter vacation Holiday homework

Class VI C

SUB ENGLISH

Q1 Write a paragraph on the following topics

A Myself

B My School

C Covid 19

D Importance of games and sports

Q2 find 20 verbs from your textbooks and write their three forms

Q3 find 20 adjectives from your textbooks and write their degrees

Q4 Write a letter to the Principal of your school for 4 days sick leave.

Q5 Write any 2 Lost Notices

Q6 Read the lessons already taught in the class.

Holiday homework

Class VII

SUBJECT ENGLISH

Q1 Read any three stories and write them in your own words

Q2 write two lost and two Found Notices

Q3 find 10 adjectives from your text book and write their degrees.

Q4 Write a letter to your friend telling him/ her about COVID 19

Q5 Prepare the lessons already taught in the class.

Q6 Do one page of handwriting practice everyday

Q7 Write paragraphs on the following topics

A Environmental Pollution

B My aim in life

C Importance of Education

Q8 Write diary for any five days of your winter vacation.

Holiday homework
Class VII B
SUBJECT ENGLISH

- Q1 Read any three stories and write them in your own words
Q2 write two Lost and two Found Notices
Q3 find 10 adjectives from your text book and write their degrees.
Q4 Write a letter to your friend telling him/ her about COVID 19
Q5 Prepare the lessons already taught in the class.
Q6 Do one page of handwriting practice everyday
Q7 Write paragraphs on the following topics
A Environmental Pollution
B My aim in life
C Importance of Education
Q8 Write diary for any five days of your winter vacation.

K.V.No-1 Armapur ,Kanpur
Holidays Homework(Winter Break)
Subject –English
Class –VII

A-Literature (Learn and prepare the given chapters)

Honeycomb (Book 1)

- 1- Expert Detectives
- 2- The Invention of Vita –Wonk
- 3- Fire: Friend and Foe

Poetry

- 1- Mystery of the Talking Fan
- 2- Dad and the Cat and the Tree
- 3- Meadow Surprises

An Alien Hand (Book 2)

- 1- I Want Something in a Cage
- 2- Chandni
- 3- The Bear Story

B-Writing Section (Do the given questions)

- 1- Read any three stories and write them in your own words.
- 2- Write two Lost and Found notices.
- 3- Find 10 adjectives from your text book and write their degrees.
- 4- Write a letter to your friend telling him/her about COVID 19.
- 5- Write paragraphs on the following topics
 - *My aim in life
 - *Importance of education.
 - *Importance of homework.
- 6- Write diary for any five days of your winter vacations.
- 7- Arrange the jumbled sentences in a proper order so that they become meaningful.
 - i- All/ the/ was/ day/ it /hot/ today
 - ii- With/the/ fury/ was/ sun/it/ all/ gleaming
 - iii- To / indoor/ people/ stay/ preferred/therefore
 - iv- And/schools/closed/colleges/to/due/excessive/heat / were
 - v- Is /of/my/ friends/to/going/ married/get/one/soon
- 8- **NOTE**- Do one page of handwriting practice everyday.

Holiday homework
Class VIII
SUB ENGLISH

- Q1 DO one page of handwriting practice
- Q2 Read any three stories and write them in your words.
- Q3 write 2 lost ,found and event notices
- Q4 write a letter to your grandfather telling him about your online classes.
- Q5 Write diary entry for any three days of your winter vacation .
- Q6 Revise all the chapters taught in class for PT2
- Q7 Revise the topics of grammar taught in class.

Holiday homework
Class IX
SUB English

- Q1 Do any five reading passages from sample paper.
- Q2 Write a letter to the editor of daily newspaper about the problem of stray animals in your area.
- Q3 Write a paragraph on the following topics
A Girl Education
B Child Labour
C Importance of trees
D Covid 19
- Q4 Write the diary entry for any five days of your winter vacation
- Q5 Read the chapters taught in the class and write the summary of each chapters
- Q6 Revise direct and indirect narration and change 20 sentences into indirect speech
- Q7 Revise tenses and do 5 exercises of fill in the blanks from sample paper
- Q8 Prapare chactersketches of important characters of literature book

Holiday homework
Class IX C/A
SUB English

- Q1 Do any five reading passages from sample paper.
- Q2 Write a letter to the editor of daily newspaper about the problem of stray animals in your area.
- Q3 Write a paragraph on the following topics
A Girl Education
B Child Labour
C Importance of trees
D Covid 19
- Q4 Write the diary entry for any five days of your winter vacation
- Q5 Read the chapters taught in the class and write the summary of each chapters
- Q6 Revise direct and indirect narration and change 20 sentences into indirect speech
- Q7 Revise tenses and do 5 exercises of fill in the blanks from sample paper
- Q8 Prapare chactersketches of important characters of literature book

Winter vacation Holiday Home work
Class X
Sub English

- Q1 solve the same paper of year 2018,2019 and 2020
- Q2 read all the chapters again and prepare the summary of all the lessons in your words
- Q3 prepare CHARACTERSKECHES of all the important characters with at least 6 value points
- Q4 Revise the format of all four types of letters
- Q5 Revise the topics of grammar taught in the class.

Winter Break Homework for SCIENCE

Class VI

1. Make a habitat album and write the following things about at least two plants and two animals
 - name of the plant / animal and paste its picture.
 - its habitat
 - at least 2 adaptations
2. Make a presentation (PPT) showing various characteristics of Living Organisms.
3. Design an experiment to show that Plants respond to Light
4. Make a list of those things/ appliances whose production has gone down due to advancement in technology.(Hint- alarm clocks)
5. Learn chapter 9 and 10
6. Be ready for extra classes on Google meet from the next week.

Science Homework for Winter Break Class VIII

Read Chapter 11 -Some Natural Phenomena thoroughly and then answer the following questions:

1. Name the two destructive natural phenomena discussed in this lesson.
2. What is lightning and how it is caused?
3. Name the scientist who showed that lightning and the spark from your clothes are essentially the same phenomenon.
4. By convention which charge is acquired by a glass rod when it is rubbed with silk?
5. What precautions should you take during a thunderstorm when you are - outside
 - inside the house
6. What is an earthquake? How is it caused?
7. What steps should be taken during an earthquake?

Activity

8. Test the conduction of electricity through various fruits and vegetables and display your result in a tabular form.
 9. Perform Activity 15.2 and tabulate your result (page 185 of your NCERT textbook).
 10. Complete Activity 15.3 and summarise your observations (page 186 of your NCERT textbook)
- Take good care of your health, stay healthy and happy.

Holiday homework Class VIII SUB ENGLISH

- Q1 DO one page of handwriting practice
- Q2 Read any three stories and write them in your words.
- Q3 write 2 lost ,found and event notices
- Q4 write a letter to your grandfather telling him about your online classes.
- Q5 Write diary entry for any three days of your winter vacation .
- Q6 Revise all the chapters taught in class for PT2
- Q7 Revise the topics of grammar taught in class.

**Science Homework for Winter Break
Class IX**

1. Complete your practical file by visiting the website of O labs.
You may also see YouTube videos for your practical's.
2. Complete your written work in Science Registers / Notebook. They shall be checked after the reopening of school.
3. Learn the chapters for Periodic Test .
4. Make a presentation (PPT)for internal assessment after the Winter Break. The topics allotted to you are as follows:
 - *Roll number 1 to 10-Oxygen cycle in nature
 - *Roll number 11 to 20-Carbon cycle in nature
 - *Roll number 21 to 30-Nitrogen cycle in nature
 - *Roll number 31 to 40-Holes in ozone layer and the probable damages
 - *Roll number 41 to 47- air, water and soil pollution.

**Winter vacation Holiday Home work
Class X D
Sub English**

- Q1 solve the same paper of year 2018,2019 and 2020
- Q2 read all the chapters again and prepare the summary of all the lessons in your words
- Q3 prepare CHARACTERSKECHES of all the important characters with atleast 6 value points
- Q4 Revise the format of all four types of letters
- Q5 Revise the topics of grammar taught in the class.

कक्षा- षष्ठी

विषय- संस्कृत

शीतावकाश गृह कार्य

1. पाठ:- नवम् (9) - क्रीडास्पर्धा से पाठ:- द्वादश- 'दशमः त्वम् असि' तक पढ़ना व याद करना है ।यही पाठ Periodic Test- 2 का पाठ्यक्रम भी है ।
2. शब्द रूप- बालक की तरह 'राम' का , बालिका की तरह 'रमा' पुष्प की तरह 'पुस्तक' का रूप फेयर काँपी में लिखना व याद करना ।
3. धातु रूप- पठ् , गम् , पठ् रूप की तरह- चल् , खाद्, हस् का रूप फेयर काँपी में लिखना व याद करना ।
4. संख्या- 1 से 20 तक संस्कृत में संख्या लिखना व याद करना है ।
5. सुलेख- में 10 पेज सुलेख लिखना । (वर्तनी सुधार हेतु पतली काँपी में)

परियोजना कार्य (फाइल में लिखना)

1. संस्कृत में छात्र प्रतिज्ञा
2. दो पेज श्लोक चित्र सहित लिखना ।
3. पाठ- दशमः त्वम् असि का चित्र बनाकर संक्षिप्त वर्णन करना ।
4. 1से 10 तक चित्र दर्शाते हुए संख्या लिखना ।यथा- एकः वृक्षः।

कक्षा- सप्तमी

विषय- संस्कृत

शीतकालीन अवकाश हेतु गृहकार्य योजना:-

कक्षा - VII
विषय - हिन्दी

1. प्रतिदिन हिन्दी कापी में एक पेज सुलेख लिखना है।
2. सभी पठित पाठों से "माया की बात" के सभी प्रश्नों को लिखकर, उत्तर लिखिए।
3. नदियों से होने वाले कार्यों के विषय में चर्चा कीजिए और इस विषय पर 10 पैरिक्तियों में निम्नलिखित लिखिए।
वाक्य
4. 'बापा छो गश्' पाठों चित्र बनाकर सुन्दर-सा। दृश्य के आधार आठ वाक्य बनाकर लिखिए।
5. किसान पर आधारित और नदियों पर आधारित चित्र बनाकर अलग - अलग कवितारुं लिखिए।
6. दादी माँ और दादाजी की फोटो बनाकर दोनों से संबंधित 5-5 वाक्य लिखिए।
7. "बाल महाभारत कथा" के आधार पर निम्नलिखित प्रश्नों के उत्तर लिखिए।
 - (i) राजा विशुट के यहाँ पांडवों के क्या-क्या थे?
 - (ii) 'यक्ष-प्रश्न' के आधार पर, मुद्दिठिठर ने यक्ष के किन किन प्रश्नों के उत्तर दिए थे?
 - (iii) 'माया सौख्य' की कहानी अपने शब्दों में लिखिए।
8. पत्र:- (i) टी.सी. प्राप्त करने के लिए प्राचार्य जी को प्रार्थना-पत्र लिखिए।
(ii) अपनी जानी के लिए एक-पत्र लिखिए।
9. निबंध:- कौविड-19 का शिक्षा पर क्या प्रभाव पड़ा है।
10. किसी शग-विशेषी चोहार पर निबंध लिखिए।
नोट -> अवकाश गृहकार्य कापी में सुन्दर-सुन्दर लिखेंगे

KENDRIYA VIDYALAYA K.V. NO. 1 ARMAPUR
SESSION – 2020-21

WINTER- BREAK HOME WORK

CLASS- VI
SCIENCE

SUBJECT – SOCIAL

HISTORY-(22/12/2020 TO 28/12/2020)

1-READ ALL THE CHAPTERS FROM 1 TO 5 AND LEARN THE
QUESTIONS AND ANSWERS.

2- MAKE A PROJECT/PPT ON THE GAUTAM BUDDHA OR MAHAVEER SWAMI

3- COLLECT THE INFORMATION ABOUT THE SAMRAT ASHOK AND WRITE ABOUT HIM.

4-MAP WORK-

(I)-SHOW THE IMPORTANT JANAPADAS , MAHAJANAPADAS AND CITIES IN THE MAP OF INDIA.

(II)-SHOW SOME IMPORTANT CITIES OF THE MAURYAN EMPIRE.

GEOGRAPHY-(29/12/2020 TO 04/01/2021)

1- READ ALL THE CHAPTERS FROM 1 TO 8 AND LEARN THE QUESTIONS AND ANSWERS.

2-DRAW A PLAN OF YOUR CLASSROOM AND SHOW THE TEACHER'S TABLE, BLACK BOARD, DESK, DOOR AND WINDOWS.

3-MAKE A PICTURE OF BIOSPHERE AND SHOW THE ATMOSPHERE, HYDROSPHERE AND LITHOSPHERE .

4-WRITE ABOUT THE THREE TYPES OF MOUNTAIN AND DRAW ITS PICTURE.

5- MAP WORK-

(I)-IN THE MAP OF WORLD SHOW ALL THE CONTINENT AND OCEANS.

(II)-IN THE MAP OF INDIA SHOW ALL ITS NEIGHBOUR COUNTRIES.

(III)- SHOW ALL THE IMPORTANT PHYSICAL FEATURES OF INDIA IN A MAP.

CIVICS –(05/01/2021 TO 10/01/2021)

1- READ ALL THE CHAPTERS FROM 1 TO 4 AND LEARN THE QUESTIONS AND ANSWERS.

2-WRITE ABOUT THE LIFE AND WORKS OF MAHATMA GANDHI.

3-MAP WORK- SHOW THE INTERNATIONAL AND STATE BOUNDRIES OF INDIA.

PROJECT OF EK BHARAT SHRESTHA BHARAT- MAKE A STATE PROJECT NOTE BOOK OF PARTNERING STATE MEGHALAYA.

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K.V.No-1 Armapur ,Kanpur
Holidays Homework(Winter Break)

Subject –English

Class –XI

1- Practice of Note making and reading section.

2- Practice of writing section.

3- Prepare the given chapters

Hornbill- i-We're Not Afraid to Die...If We Can All Be
Together

ii- The Ailing Planet:The Green Movement's
Role

iii-The Browning Version

Poetry- i- The Laburnum Top

ii- The Voice of the Rain

Snapshots- i- The Address

ii- Albert Einstein At School

iii- Mother's Day

4- Do the given questions.

I-As the Sports Captain of your school , write a notice for student's notice board informing budding cricketers to attend trials for selection teams. Invent all the necessary details.

II-You are Asma / Ashish the Head Girl/ Boy of your school. Your school is soon going to publish the annual magazine next month. Write a notice for the notice board of your school inviting students to submit write-ups . (50 words)

III- You are Surya/ Roshni , a social worker much concerned about the reported cases of Chikunguniya, a fever, spread by mosquitoes that breed during day time. Draft a poster to create awareness among people , indicating that need to maintain neat, dry and hygienic surroundings. You belong to an organization, Health For All,Nagpur.

IV- Write a speech in about 150-200 words to be given in your school assembly about “How Life is Affected by Covid-19 Pandemic”.

V- Write a debate on “ All people should have the right to own guns”.

VI- You are Incharge of Physical Education in your school,A.P.S Muradabad. Write a letter to Messrs Pioneer Sports Co., Ambala, Placing an order for a minimum of 4 sports items with details. Ask for the discount also. Sign as Raman/ Rohini.

VII-Write a letter to the Standard Book Co.,Cannanore, complaining about the poor quality of books supplied to your library. You are Mohan/ Mohini , librarian of Lajpat Roy Secondary School ,Mumbai.

VIII-You are keen to get a call centre job. You are aware that you need to improve your spoken English and get some training in personality development.

You came across the following advertisement.

Is good English important for you?
Special batches for
Students/Housewives/Professionals

**100%
JOB
Guarantee**

CALL CENTRE TRAINING
Job guarantee
Contact: Maa Sharda Education Group
Vasundhara, Sector B, Rohini, Delhi-110085

Write a letter to the Director asking for the course content, duration, fee, timings, and other details. You are Aniket/Nikita of 15, H.I.G, Colony, Pitampura, Delhi.

HOLIDAY HOMEWORK CLASS XI

Roll No: PHYSICS

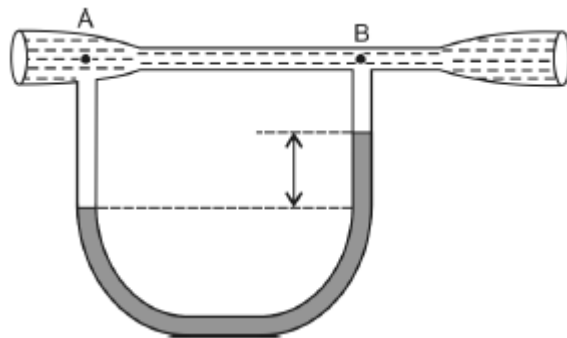
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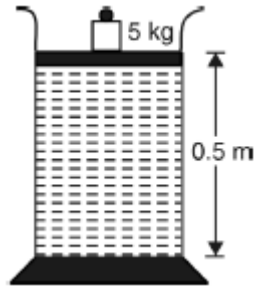
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-
- 1 What is the effect of gravity on pressure ? 1
 - 2 What is the cause of excess pressure inside a soap bubble ? 1
 - 3 Three containers have different area on the top surface and same base area. If equal volume of a liquid is put in them which will have more pressure at its base ? 1
 - 4 If the Torricellian tube is tilted by 30° with the vertical how much length of mercury will stand at atmospheric pressure at sea-level ? 1
 - 5 When do we say that a floating body is in stable equilibrium ? 1
 - 6 What will be the ratio of the velocity of efflux from two holes made with a separation ($H - 2h$) in a container holding liquid of height 'H' and one hole at a depth 'h' from its bottom ? Give reason. 1
 - 7 If a capillary tube of insufficient length is dipped into a liquid, what will happen to the liquid rising ? 1
 - 8 Why does mercury drop its level in a capillary tube ? 1
 - 9 If you double the radius of the capillary tube, what will be the drop in height rise in the tube ? 1
 - 10 Why do liquids rise in a capillary tube ? 1
 - 11 What is the impact on surface tension when (i) impurity is increased, and (ii) temperature is decreased ? 1
 - 12 Two liquids of equal mass and different densities ρ_1 and ρ_2 are mixed, what is the density of the mixture ? 1
 - 13 When 200 g mass placed in a cylindrical beaker of base area 'a' is removed, the vertical length comes out of water by 2 cm. What is the radius of the cylinder ? 1
 - 14 The blood pressure at the feet is more than the blood pressure at the head. Give reason. 1
 - 15 Why do the asbestos roof of houses get lifted in hurricane ? 1
 - 16 How does viscous force differ from normal friction ? 1
 - 17 What is the relation for maximum range of water coming out from an orifice on the side wall of a tank ? 1

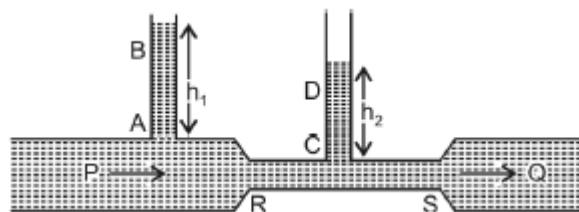
- 18 What is the excess pressure in a soap bubble of radius 10 mm, if surface tension is 2.5×10^{-2} N/m ? 1
- 19 The bags and suitcases are provided with broad handles. Why ? 1
- 20 If a mercury barometer is fitted such that the angle made with the vertical is 30° , what will be the height of mercury column under one atmosphere ? 1
- 21 Show the variation of pressure in the atmosphere with height in km. Considering that the density of air is not dependent on pressure. 1
- 22 Why is the dome of water reservoir thick at the bottom ? 1
- 23 Why does a soft plastic bag weigh the same when empty as when filled with air at atmospheric pressure ? 1
- 24 Why do we prefer mercury in a barometer ? 1
- 25 What will be the effect on the angle of contact of a liquid if the temperature increases ? 1
- 26 When a shaving brush is taken out of water its hairs cling together. Why ? 1
- 27 Surface tension of all lubricating oils and paints is kept low. Why ? 1
- 28 In soldering, addition of flux makes soldering easy. Why ? 1
- 29 Why does the liquid level stay higher below the point B ? 1



- 30 Why does the cotton wick in an oil filled lamp keep on burning ? 1
- 31 Write two factors affecting viscosity. Which one is more viscous : pure water or saline water ? 2
- 32 When a body is fully or partly immersed in a liquid, name the forces acting on the body. 2
- 33 According to Stoke, the viscous force experienced by a sphere of radius r depends on the terminal velocity and viscosity of the liquid besides radius. Derive the formula. 2
- 34 A cylindrical jar of cross-sectional area 0.01 m^2 is filled with water to a height of 50 cm (given figure). It carries a tight fitting piston of negligible mass. Calculate the pressure at the bottom of the jar when a mass of 5 kg is placed on the piston. 2



- 35 Calculate the work done in blowing a soap bubble from a radius of 2 cm to 3 cm. The surface tension of the soap solution is 30 dynes cm^{-1} . 2
- 36 Derive an expression for the excess of pressure inside an air bubble. 2
- 37 Two liquids of specific gravity 1.2 and 0.84 are poured into the limbs of a U-tube until the difference in levels of their upper surfaces is 9 cm. What will be the heights of their respective surfaces above the common surface in U-tube? What is the pressure at the common surface? [$g = 10 \text{ ms}^{-2}$] 2
- 38 When air is blown in between two balls suspended close to each other, they are attracted towards each other. Give reason. 2
- 39 As soon as parachute of a falling soldier opens, his acceleration decreases and soon becomes zero. Explain. 2
- 40 Two equal drops of water are falling through air with a steady velocity v . If the drops coalesce, what will be the new steady velocity? 2
- 41 Explain why "A drop of liquid under no external force is always spherical in shape". 2
- 42 As shown in figure, water flows from P to Q. Explain why height h_1 of column AB of water is greater than height h_2 of column CD of water. 2



- 43 It is advised not to stand near a running train. Why? 2
- 44 A hydraulic automobile lift is designed to lift cars with maximum mass of 300 kg. The area of cross-section of the piston carrying the load is 425 cm^2 . What maximum pressure would the smaller piston have to bear? 2
- 45 Prove that the pressure at a depth h from the free surface of a liquid (P) in a container is $P = P_0 + h\rho g$, where P_0 is the atmospheric pressure. 3
- 46 Establish a relation for the excess pressure on a drop of liquid of surface tension σ , giving reason for its presence. 3
- 47 State Pascal's law. Explain the working of hydraulic lift. 3

48 State and prove Bernoulli's theorem. 5

49 What is viscosity ? What are the factors affecting viscous force in a liquid flowing in a tube ? Derive the relation for the velocity upto which the liquid can have streamlined flow. 5

50 Define surface tension and surface energy. Write units and dimensions of surface tension. Also prove that surface energy numerically equal to the surface tension. 5

51 Define coefficient of viscosity and give its SI unit. On what factors does the terminal velocity of a spherical ball falling through a viscous liquid depend ? Derive the formula : 5

$$v_t = \frac{2 a^2 g}{9 \eta} (\rho - \rho')$$

where the symbols have their usual meaning.

52 (a) Define streamline.
(b) Write any two properties of streamlines.
(c) Draw streamlines for a clockwise spinning sphere.
(d) Derive equation of continuity. 5

53 (a) State and prove Archimedes' principle.
(b) What would be pressure inside a small air bubble of 0.1 mm radius situated just below the surface of water ? Surface tension of water 72×10^{-3} N/m and atmospheric pressure is 1.1×10^5 N/m². 5

54 (i) What is the phenomenon of capillarity ? Derive an expression for the rise of liquid in a capillary tube.
(ii) What will happen if the length of the capillary tube is smaller than the height to which the liquid rises ? Explain briefly. 5



HOLIDAY HOMEWORK CLASS XI

Roll No:

Time:

Date :

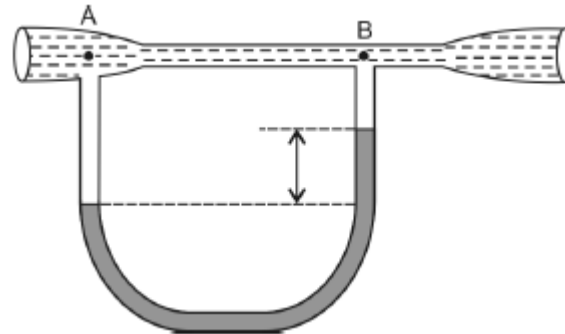
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1	What is the effect of gravity on pressure ?	1
ENGLISH		
2	What is the cause of excess pressure inside a soap bubble ?	1
3	Three containers have different area on the top surface and same base area. If equal volume of a liquid is put in them which will have more pressure at its base ?	1
4	If the torricellian tube is tilted by 30° with the vertical how much length of mercury will stand at atmospheric pressure at sea-level ?	1
5	When do we say that a floating body is in stable equilibrium ?	1
6	What will be the ratio of the velocity of efflux from two holes made with a separation $(H - 2h)$ in a container holding liquid of height 'H' and one hole at a depth 'h' from its bottom ? Give reason.	1
7	If a capillary tube of insufficient length is dipped into a liquid, what will happen to the liquid rising ?	1
8	Why does mercury drop its level in a capillary tube ?	1
9	If you double the radius of the capillary tube, what will be the drop in height rise in the tube ?	1
10	Why do liquids rise in a capillary tube ?	1
11	What is the impact on surface tension when (i) impurity is increased, and (ii) temperature is decreased ?	1
12	Two liquids of equal mass and different densities ρ_1 and ρ_2 are mixed, what is the density of the mixture ?	1

- 13 When 200 g mass placed in a cylindrical beaker of base area 'a' is removed, the vertical length comes out of water by 2 cm. What is the radius of the cylinder ? 1
- 14 The blood pressure at the feet is more than the blood pressure at the head. Give reason. 1
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- 18 What is the excess pressure in a soap bubble of radius 10 mm, if surface tension is 2.5×10^{-2} N/m ? 1
- 19 The bags and suitcases are provided with broad handles. Why ? 1
- 20 If a mercury barometer is fitted such that the angle made with the vertical is 30° , what will be the height of mercury column under one atmosphere ? 1
- 21 Show the variation of pressure in the atmosphere with height in km. Considering that the density of air is not dependent on pressure. 1
- 22 Why is the dome of water reservoir thick at the bottom ? 1
- 23 Why does a soft plastic bag weigh the same when empty as when filled with air at atmospheric pressure ? 1
- 24 Why do we prefer mercury in a barometer ? 1
- 25 What will be the effect on the angle of contact of a liquid if the temperature increases ? 1
- 26 When a shaving brush is taken out of water its hairs cling together. Why ? 1
- 27 Surface tension of all lubricating oils and paints is kept low. Why ? 1

28 In soldering, addition of flux makes soldering easy. Why ? 1

29 Why does the liquid level stay higher below the point B ?



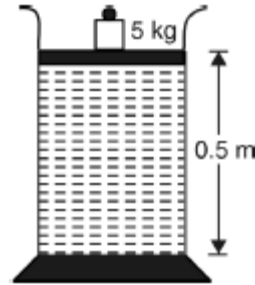
30 Why does the cotton wick in an oil filled lamp keep on burning ? 1

31 Write two factors affecting viscosity. Which one is more viscous : pure water or saline water ? 2

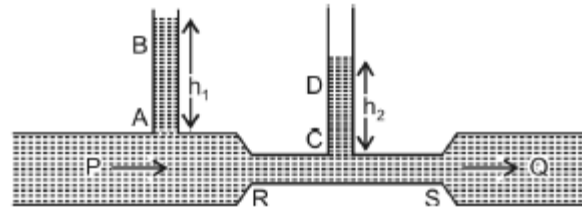
32 When a body is fully or partly immersed in a liquid, name the forces acting on the body. 2

33 According to Stoke, the viscous force experienced by a sphere of radius r depends on the terminal velocity and viscosity of the liquid besides radius. Derive the formula. 2

34 A cylindrical jar of cross-sectional area 0.01 m^2 is filled with water to a height of 50 cm (given figure). It carries a tight fitting piston of negligible mass. Calculate the pressure at the bottom of the jar when a mass of 5 kg is placed on the piston. 2



- 35 Calculate the work done in blowing a soap bubble from a radius of 2 cm to 3 cm. The surface tension of the soap solution is 30 dynes cm^{-1} . 2
- 36 Derive an expression for the excess of pressure inside an air bubble. 2
- 37 Two liquids of specific gravity 1.2 and 0.84 are poured into the limbs of a U-tube until the difference in levels of their upper surfaces is 9 cm. What will be the heights of their respective surfaces above the common surface in U-tube ? What is the pressure at the common surface ? [$g = 10 \text{ ms}^{-2}$] 2
- 38 When air is blown in between two balls suspended close to each other, they are attracted towards each other. Give reason. 2
- 39 As soon as parachute of a falling soldier opens, his acceleration decreases and soon becomes zero. Explain. 2
- 40 Two equal drops of water are falling through air with a steady velocity v . If the drops coalesce, what will be the new steady velocity ? 2
- 41 Explain why "A drop of liquid under no external force is always spherical in shape". 2
- 42 As shown in figure, water flows from P to Q. Explain why height h_1 of column AB of water is greater than height h_2 of column CD of water. 2



- 43 It is advised not to stand near a running train. Why ? 2
- 44 A hydraulic automobile lift is designed to lift cars with maximum mass of 300 kg. The area of cross-section of the piston carrying the load is 425 cm². What maximum pressure would the smaller piston have to bear ? 2
- 45 Prove that the pressure at a depth h from the free surface of a liquid (P) in a container is $P = P_0 + h\rho g$, where P_0 is the atmospheric pressure. 3
- 46 Establish a relation for the excess pressure on a drop of liquid of surface tension σ , giving reason for its presence. 3
- 47 State Pascal's law. Explain the working of hydraulic lift. 3
- 48 State and prove Bernoulli's theorem. 5
- 49 What is viscosity ? What are the factors affecting viscous force in a liquid flowing in a tube ? Derive the relation for the velocity upto which the liquid can have streamlined flow. 5
- 50 Define surface tension and surface energy. Write units and dimensions of surface tension. Also prove that surface energy numerically equal to the surface tension. 5
- 51 Define coefficient of viscosity and give its SI unit. On what factors does the terminal velocity of a spherical ball falling through a viscous liquid depend ? Derive the formula : 5

$$v_t = \frac{2 a^2 g}{9 \eta} (\rho - \rho')$$

where the symbols have their usual meaning.

- 52 (a) Define streamline.
(b) Write any two properties of streamlines. 5
(c) Draw streamlines for a clockwise spinning sphere.
(d) Derive equation of continuity.
- 53 (a) State and prove Archimedes' principle.
(b) What would be pressure inside a small air bubble of 0.1 mm radius situated just below the surface of water ? 5
Surface tension of water 72×10^{-3} N/m and atmospheric pressure is 1.1×10^5 N/m².
- 54 (i) What is the phenomenon of capillarity ? Derive an expression for the rise of liquid in a capillary tube.
(ii) What will happen if the length of the capillary tube is smaller than the height to which the liquid rises ? Explain 5
briefly.

Holidays' Home Work

Class : XI

Maths

Chapter-1 (Sets):

Read the paragraph given below and answer question number 1 and 2

In a society 60 family read Times Of India (TOI), 70 read Hindustan Times (HT), and 40 read Telegraph (Tel). 10 family read both HT and Tel but not TOI, 18 family read HT & TOI, number of family who read only TOI & Tel but not HT is 10 less than the number of family who read all the three newspaper.

Q. 1	What could be the total number of family in the society assuming that each family read at least one news paper? (a) 114 (b) 126 (c) 129 (d) None of these
Q. 2	If number of family who read both TOI and HT but not Tel is more than the number of family who read both TOI and Tel but not HT then what could be the number of family who read only Tel? (a) 15 (b) 10 (c) 16 (d) None of these

Read the paragraph given below and answer question number 3 and 4

In a college student can opt for any one or more available sports, these are Foot Ball (FB), Carom (Cr), Chess (Ch), and Volley Ball (VB), number of students who play FB and any one more game is 10, (I.e FB and Ch is 10, FB and Cr is 10 and so on), similarly number of students who play Cr and any one more game (Except FB as it is already defined as 10) is 8 and number of students who play FB and any two more games is 12. Total count for each of four Game is 100.

Q. 3	How many student play Cricket and exactly one more game? (a) 26 (b) 28 (c) 32 (d) None of these
Q. 4	If number of students who play Ch and Exactly one more game is maximum possible then what is the number of students who play only Cr. (a) 25 (b) 50 (c) 46 (d) None of these

Solve the following questions

Q. 5	A survey shows that 61%, 46% and 29% of the people watched “3 idiots”, “Rajneeti” and “Avatar” respectively. 25% people watched exactly two of the three movies and 3% watched none. What percentage of people watched all the three movies?
Q. 6	Two finite sets have m and n elements. The number of subsets of the first set is 112 more than that of the second set. The values of $m - n$ is

Chapter-2 (Relations and Functions):

Solve the following questions

Q. 1	If $P = \{x : x < 3, x \in \mathbf{N}\}$, $Q = \{x : x \leq 2, x \in \mathbf{W}\}$. Find $(P \cup Q) \times (P \cap Q)$, where \mathbf{W} is the set of whole numbers.
Q. 2	If $A = \{x : x \in \mathbf{W}, x < 2\}$ $B = \{x : x \in \mathbf{N}, 1 < x < 5\}$ $C = \{3, 5\}$ find (i) $A \times (B \cap C)$ (ii) $A \times (B \cup C)$
Q. 3	In each of the following cases, find a and b . (i) $(2a + b, a - b) = (8, 3)$ (ii) $\left(\frac{a}{4}, a - 2b\right) = (0, 6 + b)$
Q. 4	Find the domain and Range of the function $f(x) = \frac{1}{\sqrt{x-5}}$.
Q. 5	Find the range of the following functions given by (i) $f(x) = \frac{3}{2-x^2}$ (ii) $f(x) = 1 - x - 2 $

Chapter-3 (Trigonometric Functions):

Solve the following questions

Q. 1	Prove that $\frac{\tan A + \sec A - 1}{\tan A - \sec A + 1} = \frac{1 + \sin A}{\cos A}$
Q. 2	Prove that $\cos \theta \cos \frac{\theta}{2} - \cos 3\theta \cos \frac{9\theta}{2} = \sin 7\theta \sin 8\theta$.
Q. 3	If $a \cos \theta + b \sin \theta = m$ and $a \sin \theta - b \cos \theta = n$, then show that $a^2 + b^2 = m^2 + n^2$
Q. 4	Prove that $\sin 4A = 4 \sin A \cos^3 A - 4 \cos A \sin^3 A$.
Q. 5	If $\tan (A + B) = p$, $\tan (A - B) = q$, then show that $\tan 2A = \frac{p + q}{1 - pq}$

Chapter-5 (Complex Numbers):

Solve the following questions

Q. 1	If $\left(\frac{1+i}{1-i}\right)^3 - \left(\frac{1-i}{1+i}\right)^3 = x + iy$, then find (x, y) .
Q. 2	If $\frac{(1+i)^2}{2-i} = x + iy$, then find the value of $x + y$.
Q. 3	If $\left(\frac{1-i}{1+i}\right)^{100} = a + ib$, then find (a, b) .
Q. 4	If $\frac{z-1}{z+1}$ is a purely imaginary number ($z \neq -1$), then find the value of $ z $.
Q. 5	If $ z+1 = z + 2(1+i)$, then find z .

Chapter-6 (Linear Inequalities):

Solve the following questions

Q. 1	Show that the following system of linear inequalities has no solution $x + 2y \leq 3, 3x + 4y \geq 12, x \geq 0, y \geq 1$
Q. 2	Solve the following system of linear inequalities: $3x + 2y \geq 24, 3x + y \leq 15, x \geq 4$
Q. 3	Show that the solution set of the following system of linear inequalities is an unbounded region $2x + y \geq 8, x + 2y \geq 10, x \geq 0, y \geq 0$

Chapter-7 (Permutations and Combinations):

Solve the following questions

Q. 1	Out of 18 points in a plane, no three are in the same line except five points which are collinear. Find the number of lines that can be formed joining the point.
Q. 2	How many committee of five persons with a chairperson can be selected from 12 persons.
Q. 3	Find the number of positive integers greater than 6000 and less than 7000 which are divisible by 5, provided that no digit is to be repeated.
Q. 4	A bag contains six white marbles and five red marbles. Find the number of ways in which four marbles can be drawn from the bag if (a) they can be of any colour (b) two must be white and two red and (c) they must all be of the same colour.
Q. 5	In how many ways can a football team of 11 players be selected from 16 players? How many of them will (i) include 2 particular players? (ii) exclude 2 particular players?

Chapter-9 (Sequences and Series):

Solve the following questions

Q. 1	A man saved Rs 66000 in 20 years. In each succeeding year after the first year he saved Rs 200 more than what he saved in the previous year. How much did he save in the first year?
Q. 2	If the p th and q th terms of a G.P. are q and p respectively, show that its $(p + q)^{\text{th}}$ term is $\left(\frac{q^p}{p^q}\right)^{\frac{1}{p-q}}$
Q. 3	We know the sum of the interior angles of a triangle is 180° . Show that the sums of the interior angles of polygons with 3, 4, 5, 6, ... sides form an arithmetic progression. Find the sum of the interior angles for a 21 sided polygon.
Q. 4	If A is the arithmetic mean and G_1, G_2 be two geometric means between any two numbers, then prove that $2A = \frac{G_1^2}{G_2} + \frac{G_2^2}{G_1}$
Q. 5	If $p^{\text{th}}, q^{\text{th}}$, and r^{th} terms of an A.P. and GP. are both a, b and c respectively, show that $a^{b-c} \cdot b^{c-a} \cdot c^{a-b} = 1$

Chapter-10 (Straight Lines):

Read the paragraph given below and answer question number 1 and 2

A triangle ABC is given where vertex A is $(1, 1)$ and the orthocentre is $(2, 4)$. Also sides AB and BC are members of the family of lines

$ax + by + c = 0$ where a, b, c are in A.P

Q. 1	The vertex B is (a) $(2, 1)$ (b) $(1, -2)$ (c) $(-1, 2)$ (d) $(1, 2)$
Q. 2	Triangle ABC is a/an (a) obtuse angled triangle (b) right angled triangle (c) acute angled triangle (d) equilateral triangle

Read the paragraph given below and answer question number 3 and 4

Let $ABCD$ be a parallelogram the equation of whose diagonals are $AC : x + 2y = 3$; $BD : 2x + y = 3$. If length of diagonal $AC = 4$ units and area of $ABCD = 8$ sq. units.

Q. 3	The length of other diagonal BD is (a) $\frac{10}{3}$ (b) 2 (c) $\frac{20}{3}$ (d) 5
Q. 4	The length of side AB is equal to (a) $\frac{2\sqrt{58}}{3}$ (b) $\frac{2\sqrt{58}}{9}$ (c) $\frac{3\sqrt{58}}{9}$ (d) $\frac{4\sqrt{58}}{9}$

Solve the following questions

Q. 5	Find the equation of the straight line which passes through the point $(1, -2)$ and cuts off equal intercepts from axes.
Q. 6	Find the equation of the line passing through the point of intersection of $2x + y = 5$ and $x + 3y + 8 = 0$ and parallel to the line $3x + 4y = 7$.
Q. 7	Find the equation of the line which passes through the point $(-4, 3)$ and the portion of the line intercepted between the axes is divided internally in the ratio $5 : 3$ by this point.

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Winter Vacation Holiday Homework

Class VII

Question 1. Find the ratio of:

(a) 5 km to 400 m

Ans 25 : 2

(b) 2 hours to 160 minutes

Ans 3 : 4

Question 2. Find :

(i) 36% of 400

Ans 144

(ii) $16\frac{2}{3}\%$ of 32

Ans $\frac{16}{3}$

Question 3. Find a number whose $6\frac{1}{4}\%$ is 12.

Ans 192.

Question 4. Convert each of the following into the decimal form:

(a) 25.2%

Ans 0.252

(b) 0.15%

Ans 0.0015

Question 5. A machine costs ₹ 7500. Its value decreases by 5% every year due to usage. What will be its price after one year?

Ans ₹ 7125

Question 6. What sum of money lent out at 12 per cent p.a. simple interest would produce ₹ 9000 as interest in 2 years?

Ans ₹ 37500

Question 7. ₹ 9000 becomes ₹ 18000 at simple interest in 8 years. Find the rate per cent per annum.

Ans $12\frac{1}{2}\%$.

Question 8. Radhika borrowed ₹ 12000 from her friends. Out of which ₹ 4000 were borrowed at 18% and the remaining at 15% rate of interest per annum. What is the total interest after 3 years?

Ans ₹ 5760

Question 9. Bhavya earns ₹ 50,000 per month and spends 80% of it. Due to pay revision, her monthly income increases by 20% but due to price rise, she has to spend 20% more. Find her new savings.

Ans ₹ 12,000

Question 10. The simple interest on a certain sum at 5% per annum for 3 years and 4 years differ by ₹ 82. Find the sum.

Ans ₹ 1640

Question 11. Rashmi obtains 480 marks out of 600. Rajan obtains 560 marks out of 700. Whose performance is better?

Question 12. Divide the sum of $-2\frac{15}{17}$ and $3\frac{5}{34}$ by their difference.

Ans $\frac{9}{205}$

Question 13. Simplify:

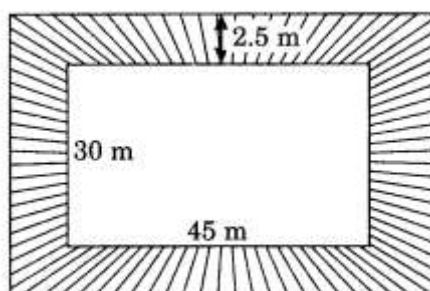
$$21.5 \div 5 - \frac{1}{5} \text{ of } (20.5 - 5.5) + 0.5 \times 8.5$$

Ans 5.55

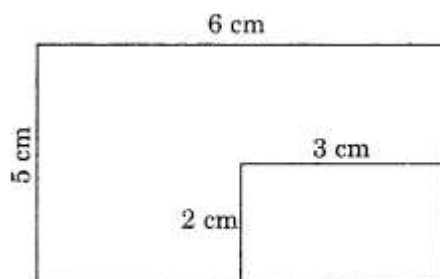
Question 14. A wire of length 176 cm is first bent into a square and then into a circle. Which one will have more area and by how much?

Ans the circle will have more area by 528 cm².

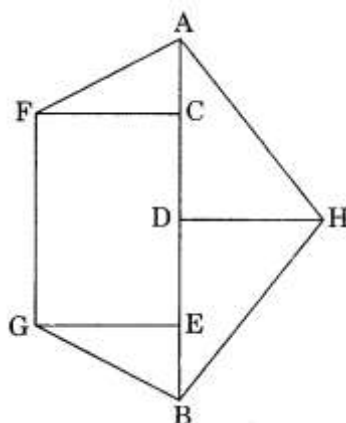
Question 15. A rectangle park is 45 m long and 30 m wide. A path 2.5 m wide is constructed outside the park. Find the area of the path. Ans 400 m².



Question 16. A rectangular piece of dimension 3 cm × 2 cm was cut from a rectangular sheet of paper of dimensions 6 cm × 5 cm. Find the ratio of the areas of the two rectangles. Ans 5 : 1



Question 17. Find the area of the following polygon if AB = 12 cm, AC = 2.4 cm, CE = 6 cm, AD = 4.8 cm, CF = GE = 3.6 cm, DH = 2.4 cm. Ans 50.40 cm².



HOLIDAY HOME WORK

CLASS - XI

[CHEMISTRY]

Q1:- Explain

- (i) Dispersion force (ii) Dipole - Dipole force
(iii) Dipole induced ^{dipole} forces (iv) Hydrogen bond
by giving example.

Q2:- State Boyle's law. Write its mathematical expression. Also draw the graph of Boyle's law.

Q3:- What names are given to the following ideal gas relationships?

- (a) Volume and moles at constant T & P .
(b) Pressure of non-reacting gases in mixture of constant T and V .
(c) V & T in Kelvin at constant P & n .

Q4:- What is isochore and isobar?

Q5:- State Charles's law, what is absolute temperature?

Q6:- What is ideal gas equation? why gas constant is known as Universal gas constant.

Q7:- State and explain Dalton's law of partial pressures. Prove that partial pressure of a gas is equal to the product of its mole fraction and total pressure in a gaseous mixture.

Q8:- How are the three states of matter compared? Give point of difference.

Q9:- Explain open, closed and isolated system with examples.

Q10:- Explain macroscopic system and properties.

Q11:- Define isochoric process.

Q12:- Define the following - (a) System (b) Surroundings (c) Boundary.

Q13:- why internal energy is a state function but work is not?

Q14:- what is an adiabatic process? Give example.

Q15:- what is first law of thermodynamics? Give its mathematical representations.

Q16:- what are extensive & intensive properties?
Give two examples of each.

Q17:- Define Heat Capacity, specific heat Capacity and molar heat Capacity of a system.

Q18:- Explain the enthalpy of formation and enthalpy of combustion of a reaction.

Q19:- Define the Gibbs ~~en~~ free energy. Give an expression for the Gibbs Helmholtz equation.

Q20:- Give the Hess's Law of Constant Heat?

Q21:- (a) Write expression showing relationship between K_p and K_c . ~~for~~

(b) Define conjugate acid and base with an example.

Q22:- Define the term "pH of solution".

Q23:- The H^+ concentration of a solution is 10^{-4} . Calculate the pH of solution.

Q24:- what is Le Chatelier's principle?

Q25:- what are the effect of temperature, pressure and concentration on the equilibrium?

Q26:- what are the effect of catalyst and inert gas addition?

Q27:- what is an ionic equilibrium?

Q28:- what is a chemical equilibrium?

Q29:- what is solubility product?

Q30:- Define Lewis Acids and Bases. Give example of each.

Q31:- what is a common ion effect?

Q32:- Explain Bronsted & Lowery Concept. How it is better than Arrhenius.

Q33:- what is the solubility of Ag_2CrO_4 in water if the value of the solubility product $K_{sp} = 1.3 \times 10^{-11}$ (mole/lit)³.

Q34:- Name an acid buffer and an alkaline buffer each.

Q35:- (a) Write the formula for the conjugate acid of (i) F^- (ii) OH^-
(b) Write the formula for conjugate base of (i) HNO_2 (ii) OH^-