



PRAGATI PUBLIC SCHOOL, DWARKA
HOLIDAY HOMEWORK
SESSION 2017-18
CLASS X

Dear Children

At last the much awaited summer holidays have begun. Summer vacation full of fun, frolic and relaxation will make you happy and regenerated. Most of you must be excited about the travel plans your parents have made for you during the vacation. And no doubt, the sweltering heat of June, the 45° C and above temperatures, will surely keep you busy and occupied.

We have some very useful Holiday Homework for you this vacation. We are sure you will like to take some time off your leisure time during these holidays so that when you join back, you are not short of your practice and rhythm. It is very important as 10th students will be facing board exam in current session with full syllabus. You are sure to enjoy these learning activities. The projects have been chosen with a lot of deliberation. Utmost care has been taken to ensure that you use your creativity, your innovative ideas and your imagination to shape your projects into beautiful, wonderful 'creations'.

All the Best and Have Fun!!

HOLIDAY HOMEWORK 2017

English

- Q1.** Write an article on 'Demonetisation- Intent is good but needed more research'.
(Word limit 150- 200)
- Q2.** Imagine yourself to be a Rs. 1000 note which is not being in use any more; express your feelings through a diary entry. (Word-limit 120-150)
- Q3.** Write the procedure to be followed while opening an account in a bank. (Paragraph form)
- Q4.** Find out any five interesting rituals/customs related to money followed around the world. Present them in an attractive manner with pictures. (Eg. Throwing a coin in a wishing well is considered auspicious by many people)
- Q5.** Write 20 Idioms and Phrases and their usage in your own sentence.
- Q6.** Do the exercises of Units 1-3 of the workbook.

NOTE – Kindly do Q1 to Q5 in the fair grammar notebook.

Physics

Read the chapter thoroughly from the NCERT book and solve the following question bank

GIST OF THE LESSON

1. A good source of energy is one that is able to provide large amount of work per unit volume or mass, be easily accessible at economical rate and can be easily stored and transported.
2. Conventional sources of energy: Fossil fuels, coal, petroleum, natural gas (thermal power plants), energy of flowing water (hydro water plants), biomass, cow-dung, plants and vegetable wastes (bio-gas plants), wind energy (windmill).
3. Fossil fuels: Any naturally occurring organic fuel formed in the Earth's crust, such as petroleum, coal and natural gas are called fossil fuels.
4. Alternate or non-conventional sources of energy:

Solar

Energy-energy derived from sun, Nuclear energy-fission of radioactive substances, Geo-thermal energy-energy derived from hot spots under the earth, Ocean energy-ocean thermal energy, wave energy.

5. Non-renewal sources of energy: Fossil fuels like coal, petroleum and natural gas non-renewable.
6. Thermal power plants: Thermal power plants should be preferably located near coal or oil fields. It is easier to transport electricity than the fuel.
7. Hydropower plants: Convenient location to build dams. Potential energy of falling water is converted into electricity.
8. Biomass: The plant and animal products, which act as the source of fuel is said to be biomass.
9. Biogas: Cow-dung, various plants materials like the residue after harvesting the crops, vegetable waste and sewage decomposed in the absence of oxygen to give biogas (or Gobar gas).
- 10 Biogas plants: Anaerobic micro-organisms (in the absence of oxygen) decompose complex compounds of cow-dung slurry or biomass-water mix produce biogas (60-80% methane).
11. Tidal energy: The gravitational pull of the moon on the rotating earth causes rise and fall in the level of water in the sea. The sea-level changes during the day. This phenomenon is called high and low tides and difference in sea levels gives us tidal energy. Tidal energy is harnessed by constructing a dam across narrow opening to the sea. A turbine fixed at the opening of the dam converts tidal energy to electricity.
12. Windmill: The power of wind ($>15\text{km/h}$) gives rotatory motion of the windmill which is used to turn the turbine of the electric generator. The output of a single windmill is quite small and so a number of windmills are to be erected over a large area.
13. Nuclear reactor is a device in which a fission reaction is carried out in a controlled manner. The energy so released is used to heat water which then turns turbines and generates electricity. (Note: Fission of heavy radioactive isotopes gives tremendous amount of energy.)
14. Environment consequences: Sources of energy as are available produce lot of pollution in the atmosphere or cause environmental damage in other ways.
15. Quality of fuel is measured by its calorific value (heat regenerated by burning unit mass of a substance)
16. Solar energy: 47% of the sun's energy reaching the periphery of the earth's atmosphere reaches the earth's surface. One m^2 of earth's surface receives $1.4\text{kJ}/\text{m}^2\text{s}$. This is called solar constant. This energy is trapped by various means such as solar cookers, solar heaters and solar cells. A typical solar cell (using high quality silicon or silver) develops a voltage of 0.5-1V and can produce 0.7W of electricity. So a panel of solar cells is used.

Very short questions with answers (1 mark)

Q.1. Name the largest component of biogas.

Ans. The largest component (upto75%) of biogas is methane.

Q.2. What is greenhouse effect?

Ans. The glass roof and glass walls of a greenhouse allow heat and sunlight to enter it but do not allow heat (infrared radiation) to escape. On account of this, greenhouse gets warmed.

Q.3. Name the gaseous fuel, out of the following which has the highest calorific value:

Hydrogen, Methane, LPG, Biogas

Ans. Hydrogen.

Q.4. Why is CNG considered an environmental friendly fuel?

Ans. CNG does not produce toxic gases on burning.

Q.5. Name a fraction obtained during refining of petroleum which does not find use as a fuel.

Ans. Lubricating oil.

Q.6. Which of the following gases is a major constituent of biogas: Carbon monoxide, hydrogen, methane, carbon dioxide?

Ans. Methane (75%)

Q.7. What is slurry left over after generation of biogas in biogas plant used?

Ans. The slurry is rich in nitrogenous and phosphorus compounds and as such serves as excellent manure.

Q.8. How is the increase in demand for energy affecting our environment adversely?

Ans. We use fossil fuels to meet the increased energy demands. As a result of this, pollutants so produced adversely change the composition of the environment.

Q.9. Name the process by which energy is produced in a nuclear reactor.

Ans. In a nuclear reactor, energy is produced by the process of nuclear fission.

Q.10. Which one of the following is a renewable resource: Natural gas, petroleum, Ground water, Coal

Ans. Ground water.

MCQ on SOURCES OF ENERGY

Q.1. Choose the incorrect statement regarding wind power:

- (a) It is expected to harness wind power to minimum in open space.
- (b) The potential energy content of wind blowing at high altitudes is the source of wind power.
- (c) Wind hitting at the blades of a windmill causes them to rotate. The rotation thus achieved can be utilized further
- (d) One possible method of utilizing the energy of rotational motion of the blades of a windmill is to run the turbine of an electric generator.

Ans (b)

Q.2. Acid rain happens because:

- (a) Sun leads to heating of upper layer of atmosphere.
- (b) burning of fossil fuels release oxides of carbon, nitrogen and sulphur in the atmosphere.
- (c) electrical charges are produced due to friction amongst clouds.
- (d) earth atmosphere contains acids.

Ans. (b)

Q.3. In a hydro power plant

- (a) potential energy possessed by stored water is converted into electricity.
- (b) kinetic energy possessed by stored water is converted into potential energy.
- (c) electricity is extracted from water.
- (d) water is converted into steam to produce electricity.

Ans. (a)

Q.4. which one of the following forms of energy leads to least environmental pollution in the process of its harnessing and utilization?

- (a) nuclear energy (b) thermal energy (c) solar energy (d) geothermal energy

Ans. (c)

Q.5. Which of the following is a non-renewable source of energy?

- (a) wood
- (b) sun
- (c) fossil fuels
- (d) wind

Ans. (c)

Q.6. Ocean thermal energy is due to

- (a) energy stored by waves in the ocean
- (b) temperature difference at different levels in the ocean
- (c) pressure difference at different levels in the ocean.
- (d) tides arising out in the ocean.

Ans. (b)

Q.7. the major problem in harnessing nuclear energy is how to:

- (a) split nuclei.
- (b) sustain the reaction.
- (c) dispose off spent fuel safely.
- (d) convert nuclear energy into electrical energy.

Ans. (c)

Q.8. which is the ultimate source of energy?

- (a) water
- (b) sun
- (c) uranium
- (d) fossil fuels

Ans. (b)

Q.9. The main constituent of biogas is

- (a) methane
- (b) carbon dioxide
- (c) hydrogen
- (d) hydrogen sulphide.

Ans. (a)

Q.10. the power generated in a windmill:

- (a) is more in rainy season since damp air would mean more air mass hitting the blades.
- (b) depends on the height of the tower.
- (c) depends on wind velocity.
- (d) can be increased by planting tall trees close to the tower.

Ans. (c)

Q.11. choose the correct statement:

- (a) Sun can be taken as an inexhaustible source of energy.
- (b) There is infinite storage of fossil fuel inside the earth.
- (c) Hydro and wind energy plants are non-polluting sources of energy.
- (d) Waste from a nuclear power plant can be easily disposed off.

Ans. (a)

Q12. which part of the solar cooker is responsible for greenhouse effect?

- (a) coating with black colour inside the box
- (b) mirror
- (c) glass sheet.
- (d) outer cover of the solar cooker

Ans. (c)

Q.13. In a hydroelectric power plant more electrical power can be generated if water falls from a greater height because:

- (a) its temperature increases.
 - (b) larger amount of potential energy is converted into kinetic energy.
 - (c) the electricity content water increases with height.
 - (d) more water molecules dissociate into ions.
- Ans. (b).

Q.14. choose the incorrect statement:

- (a) We are encouraged to plant more trees so as to ensure clean environment and also provide bio-mass fuel.
- (b) Gobar-gas is produced when crops, vegetable wastes etc. Decompose in the absence of oxygen.
- (c) The main ingredient of bio-gas is ethane and it gives a lot of smoke and also produces a lot of residual ash.
- (d) Bio-mass is a renewable source of energy.

Ans. (c)

Q.15. Fuel used in thermal power plants is

- (a) water
- (b) uranium
- (c) biomass
- (d) fossil fuels

Ans. (d)

Short answer type questions.

- 1 Q1.what are the advantages of fossil fuel?
- 2 What are the advantages of hydro energy fuel?
- 3 What are the advantages of biomass energy?
- 4 What are the advantages of wind energy?
- 5 What are the advantages of energy from ocean?
- 6 What are the advantages of geothermal energy?
- 7 What are the advantages of nuclear energy?
- 8 What are the advantages of solar energy?
- 9 What are the limitations wind energy
- 10 What are the limitations solar energy
- 11 What are the limitations geothermal energy
- 12 What are the limitations energy from sea
- 13 What are the limitations biomass energy
- 14 What are the limitations hydro energy
- 15 What are the disadvantages of fossil fuel?
- 16 What are the disadvantages of using nuclear energy?
- 17 What is meant by indirect utilisation of solar energy?
- 18 Usage of hydro energy disturbs the ecological balance. Comment
- 19 Compare nuclear fission and fusion.

Long answer type (3 marks)

Q1.explain with the help of diagram the working of biogas plant.

Q2. Explain with the help of diagram the working of OTEC plant.

Q3.explain nuclear fission and fusion processes.

Q 4.Explain the construction of solar cooker with the help of a diagram

Q5. How were coal and petroleum formed?

Biology

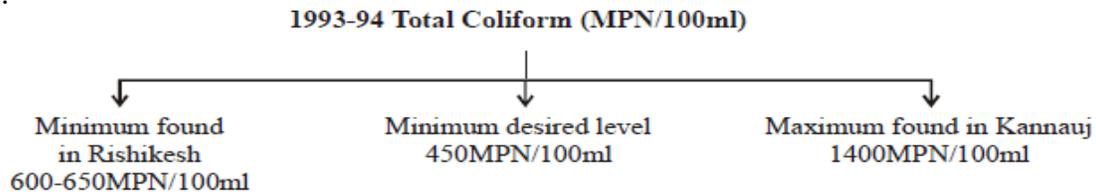
CHAPTER 14: NATURAL RESOURCES

Read the chapter thoroughly and answer the questions.

Points to remember:

- **Natural Resource** provided to us by nature
Soil, air, water, forests
Wildlife, coal and petroleum are used by man for his survival.
- **Types of Resources:** (a) *Exhaustible*: present in limited quantity e.g.
Coal petroleum. (b) *Inexhaustible*: present in unlimited quantity e.g. Air,
water.
- Management of natural resources is needed for conservation of natural resources.
- There are National and International Laws and Acts to protect the environment.

- **Ganga Action Plan:** Multi Crore Project came in 1985 to clean river Ganga and improve the water quality.
- Contamination of river water is indicated by the presence of coliform (A group of bacteria found in human intestine) and acidic water (can be tested by the ph paper).

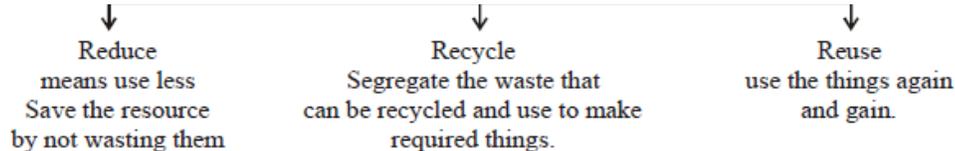


- MPN → Most probable number.
- National Award for wildlife conservation – in the memory of Amrita Devi Bishnoi who lost her life in the protection of Khejri trees in Rajasthan along with 363 other people. This award is given every year by Indian Government to the people who show exemplary courage in protection of environment.
- **Chipko Andolan:** Movement originated in Garhwal in early 1970s that was the result of a grass root level effort to end the alienation of people from their forest. Initiated by Sunder Lal Bahuguna and local women to save the trees by hugging them.

● Protection of Sal forest in West Bengal in 1972. (People’s participation in management of forests): A.K Banerjee involved villagers to protect Sal forests growing in the area of 1272 hectares of Midnapore district of West Bengal. In return villagers were given employment in silviculture and harvesting operations, 25% of forest harvest and fodder and fuel wood at nominal fee. In 12 yrs. the worthless forest became a forest of worth 12.5 crores.

Amrita Devi Bishnoi Award: Amrita Devi bishnoi, in 1731 sacrificed her life along with her three daughters and 363 followers to save Khejri trees in Jodhpur Rajasthan. Government of India has recently instituted an Amrita Devi Bishnoi award in memory of her.

- Three R’s to save the environment



Reuse is better than recycling as it saves energy.

- Management of Natural Resources is necessary so that these may last for the generations to come and are not exploited for short term gains.

- **Forest and wild life conservation** – Forests are biodiversity hot spots.

Biodiversity of an area is the number of species of different life forms like bacteria, fungi, flowering plants, insects, birds etc.

- **Hotspot** means an area full of biological diversity.

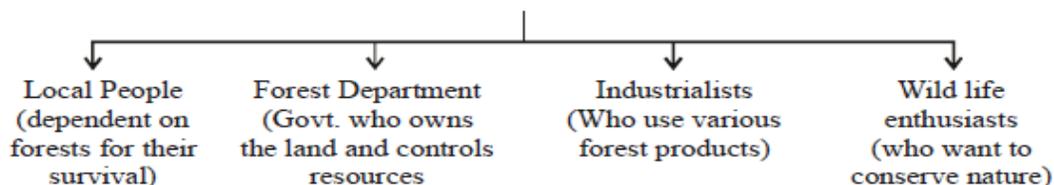
– Loss of diversity may lead to a loss of ecological stability/ecological imbalance.

STAKE HOLDERS

A person having interest or concern for something is called as stake holder.

Stakeholders of forests: (their dependence on forests)

Stakeholders of forests : (their dependence on forests)



Sustainable Management

Management of resources wisely to make them available for future generations.

Water

- Water is a basic necessity for all terrestrial forms of life.
- Irrigation methods like dams, tanks and canals have been used in various part of India.

Dams

- **Advantages of Dams** – Ensures adequate water for irrigation (sufficient to satisfy need).
- Generate electricity.
- Continuous supply of water in regions.

Disadvantages

- No equitable distribution of water.
- Large no. of people displaced without compensation. : Social reason
- Involves huge amount of Public money without giving proper benefits. Economic reason
- Causes deforestation and loss of biological diversity. Environmental reason
- **Water Harvesting:** Collection of rain water and its utilization for various purposes.
- **Advantages of storing water in the ground:**
 - (a) It does not evaporate.
 - (b) It spreads out to recharge wells.
 - (c) It provides moisture for vegetation over a wide area
 - (d) It does not provide breeding grounds for mosquitoes.
 - (e) It is protected from contamination by human and animal waste.
- Various ancient methods of water harvesting

Method State

Khadin, tanks, nadis Rajasthan

Bandharas, Tals Maharashtra

Bundhis Madhya Pradesh and U.P.

Pynes, ahars Bihar

Kulhs Himachal Pradesh

Ponds Jammu Region

Eris (tanks) Tamilnadu

- **Bawlis** – Old method of water harvesting in Delhi and nearby region.

COAL AND PETROLEUM

- Coal and petroleum are non-renewable natural resources.
- Coal was formed from the remains of trees buried deep inside the earth some 500 million years ago.
- Petroleum is formed by the bacterial decomposition of dead marine plants and animals (buried at the bottom of the seas. This decomposition takes place under high pressure and temperature and formation of petroleum take millions of years of time.
- Coal and petroleum are called fossil fuels. They contain sulphur, Nitrogen and hydrogen other than carbon.
- Very soon coal and petroleum will be exhausted.
- At present rate of usage, petroleum will last us for about 40 years and the coal resources will last for another 200 years.
- Harmful effects of using fossil fuels:
 - * Combustion of coal and hydrocarbons release a large amount of carbon monoxide, carbon dioxide, sulphur dioxide, oxides of nitrogen, etc. These cause air pollution and cause various diseases like respiratory and throat problems congestion etc.

Global warming: Excessive emission of greenhouse gases like carbon dioxide causes a rise in atmospheric temperature. (Increased greenhouse effect).

- Acid rain
- Smog: unburnt hydrocarbons + fog

Q.1 Why should we use fossil fuels judiciously?

Ans. Fossil fuels are limited and exhaustible. Once exhausted, coal and petroleum will not be available to us in near future because they are formed extremely slowly over a very long time.

Q.2 Write the steps you can take to reduce the consumption of coal and petroleum.

Ans. * Switch off electricity appliance when not needed.

* Use public transport instead of private one.

* Whenever possible, use solar cooker.

* Use stairs to climb instead of lift.

1 MARK QUESTIONS:

1. Why is it necessary to conserve our environment?
2. Define sustainable development
3. Name any two exhaustible resources
4. A person lives near a forest. Make a list of four items which he can get from the forest to meet his daily requirements.
5. List two advantages of water harvesting.
6. Why reuse is better than recycle?
7. What are khadin? Where there found?
8. List two steps you would take to conserve electricity in your house.
9. Who are called stake holders?
10. Name some traditional water harvesting systems in India.
11. Why is LPG considered a better fuel than petrol?
12. List two criteria of measuring biodiversity of an area.
13. Why are forests considered as biodiversity hot spots?
14. Name a greenhouse gas produced due to combustion of fossil fuels. Mention its bad effect to the environment.

2 MARKS QUESTIONS

1. How mining is a cause of pollution?
2. Make a list of four forests products that we use.
3. How burning of fossil fuels is effecting our environment?
4. Suggest two measures for controlling CO₂ levels in atmosphere.
5. Why should we conserve forest and wild life?
6. Enlist the stake holders of forest.
7. What is monoculture? How has it resulted in loss of biodiversity?
8. Why is replenishment of forests necessary? Give four reasons.
9. The prejudice against the tradition use of forest areas has no basis. Explain.
10. Although coal and petroleum are produced by degradation of biomass, yet we need to conserve them. Why?

3 MARKS QUESTIONS

1. What are three main problems from dams?
2. How can you reduce energy consumption at your level? Suggest at least three points.
3. Explain the maximum of 'Reduce', 'Recycle' and 'Reuse' in your own words.
4. Give the advantages of ground water over surface water.
5. Draw diagram of Khadin system.

6. What is Chipko Andolan? Who initiated it and how it led to protection of forests?
7. Explain people participation in management of forest taking the case of West Bengal sal forests.
8. Explain some harmful effects of agricultural practices on the environment.
9. Suggest a few useful ways of utilizing waste water.

5 MARKS QUESTIONS

1. What is the main objective of water harvesting techniques? Name & ancient water harvesting structures used in India. Mention 3 causes for failure to sustain water availability under ground?
2. Discuss the damage caused to forest by the following activities:
 - (a) Building rest houses for 10% tourists in national parks
 - (b) Grazing domestic animals on National Parks.
 - (c) Tourists throwing plastic bottles, covers and other litter in National Parks.
3. What is the importance of forest as a resource? Discuss in brief.

Chemistry

1. Match the acids given in Column (A) with their correct source given in Column (B)

Column (A)	Column (B)
(a) Lactic acid	(i) Tomato
(b) Acetic acid	(ii) Lemon
(c) Citric acid	(iii) Vinegar
(d) Oxalic acid	(iv) Curd

2. Match the important chemicals given in Column (A) with the chemical formulae given in Column (B)

Column (A)	Column (B)
(a) Plaster of Paris	(i) Ca(OH)_2
(b) Gypsum	(ii) $\text{CaSO}_4 \cdot \frac{1}{2} \text{H}_2\text{O}$
(c) Bleaching Powder	(iii) $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$
(d) Slaked Lime	(iv) CaOCl_2

3. What will be the action of the following substances on litmus paper?

Dry HCl gas, Moistened NH_3 gas, Lemon juice, Carbonated soft drink, Curd, Soap solution.

4. Name the acid present in ant sting and give its chemical formula. Also give the common method to get relief from the discomfort caused by the ant sting.
5. What happens when nitric acid is added to egg shell?
6. A student prepared solutions of (i) an acid and (ii) a base in two separate beakers. She forgot to label the solutions and litmus paper is not available in the laboratory. Since both the solutions are colourless, how will she distinguish between the two?
7. How would you distinguish between baking powder and washing soda by heating?
8. Salt A commonly used in bakery products on heating gets converted into another salt B which itself is used for removal of hardness of water and a gas C is evolved. The gas C when passed through lime water, turns it milky. Identify A, B and C.
9. In one of the industrial processes used for manufacture of sodium hydroxide, a gas X is formed as by product. The gas X reacts with lime water to give a compound Y which is used as a bleaching agent in chemical industry. Identify X and Y giving the chemical equation of the reactions involved.

10. Fill in the missing data in the following table

Name of the salt	Formula	Salt obtained from	
		ACID	BASE
(i) Ammonium chloride	NH ₄ Cl		NH ₄ OH
(ii) Copper sulphate		H ₂ SO ₄	
(iii) Sodium chloride	NaCl		NaOH
(iv) Magnesium nitrate	Mg(NO ₃) ₂	HNO ₃	
(v) Potassium sulphate	K ₂ SO ₄		
(vi) Calcium nitrate	Ca(NO ₃) ₂	Ca(OH) ₂	

11. What are strong and weak acids? In the following list of acids, separate strong acids from weak acids.

Hydrochloric acid, citric acid, acetic acid, nitric acid, formic acid, sulphuric acid.

12. When zinc metal is treated with a dilute solution of a strong acid, a gas is evolved, which is utilised in the hydrogenation of oil. Name the gas evolved. Write the chemical equation of the reaction involved and also write a test to detect the gas formed.

13. For making cake, baking powder is taken. If at home your mother uses baking soda instead of baking powder in cake,

- how will it affect the taste of the cake and why?
- how can baking soda be converted into baking powder?
- what is the role of tartaric acid added to baking soda?

14. A metal carbonate X on reacting with an acid gives a gas which when passed through a solution Y gives the carbonate back. On the other hand, a gas G that is obtained at anode during electrolysis of brine is passed on dry Y, it gives a compound Z, used for disinfecting drinking water. Identify X, Y, G and Z.

15. A dry pellet of a common base B, when kept in open absorbs moisture and turns sticky. The compound is also a by-product of chloralkali process. Identify B. What type of reaction occurs when B is treated with an acidic oxide? Write a balanced chemical Equation for one such solution.

16. A sulphate salt of Group 2 element of the Periodic Table is a white, soft substance, which can be moulded into different shapes by making its dough. When this compound is left in open for some time, it becomes a solid mass and cannot be used for moulding purposes. Identify the sulphate salt and why does it show such a behaviour? Give the reaction involved.

17. Identify the compound X on the basis of the reactions given below. Also, write the name and chemical formulae of A, B and C.

XXXX



Multiple Choice Questions

10. Sodium hydrogen carbonate when added to acetic acid evolves a gas. Which of the following statements are true about the gas evolved?

- (i) It turns lime water milky
- (ii) It extinguishes a burning splinter
- (iii) It dissolves in a solution of sodium hydroxide
- (iv) It has a pungent odour

- (a) (i) and (ii)
- (b) (i), (ii) and (iii)
- (c) (ii), (iii) and (iv)
- (d) (i) and (iv)

11. Which of the following is(are) true when HCl (g) is passed through water?

- (i) It does not ionise in the solution as it is a covalent compound.
- (ii) It ionises in the solution
- (iii) It gives both hydrogen and hydroxyl ion in the solution
- (iv) It forms hydronium ion in the solution due to the combination of hydrogen ion with water molecule

- (a) (i) only
- (b) (iii) only
- (c) (ii) and (iv)
- (d) (iii) and (iv)

12. Which of the following statements is true for acids?

- (a) Bitter and change red litmus to blue
- (b) Sour and change red litmus to blue
- (c) Sour and change blue litmus to red
- (d) Bitter and change blue litmus to red

13. Which of the following are present in a dilute aqueous solution of hydrochloric acid?

- (a) $\text{H}_3\text{O}^+ + \text{Cl}^-$
- (b) $\text{H}_3\text{O}^+ + \text{OH}^-$
- (c) $\text{Cl}^- + \text{OH}^-$
- (d) unionised HCl

14. Identify the correct representation of reaction occurring during chloralkali process

- (a) $2\text{NaCl}(\text{l}) + 2\text{H}_2\text{O}(\text{l}) \rightarrow 2\text{NaOH}(\text{l}) + \text{Cl}_2(\text{g}) + \text{H}_2(\text{g})$
- (b) $2\text{NaCl}(\text{aq}) + 2\text{H}_2\text{O}(\text{aq}) \rightarrow 2\text{NaOH}(\text{aq}) + \text{Cl}_2(\text{g}) + \text{H}_2(\text{g})$
- (c) $2\text{NaCl}(\text{aq}) + 2\text{H}_2\text{O}(\text{l}) \rightarrow 2\text{NaOH}(\text{aq}) + \text{Cl}_2(\text{aq}) + \text{H}_2(\text{aq})$
- (d) $2\text{NaCl}(\text{aq}) + 2\text{H}_2\text{O}(\text{l}) \rightarrow 2\text{NaOH}(\text{aq}) + \text{Cl}_2(\text{g}) + \text{H}_2(\text{g})$

15. Which one of the following can be used as an acid–base indicator by a visually impaired student?

- (a) Litmus
- (b) Turmeric
- (c) Vanilla essence
- (d) Petunia leaves

16. Which of the following substance will not give carbon dioxide on treatment with dilute acid?

- (a) Marble
- (b) Limestone
- (c) Baking soda
- (d) Lime

19. Which of the following is acidic in nature?

- (a) Lime juice
- (b) Human blood
- (c) Lime water
- (d) Antacid

20. To protect tooth decay we are advised to brush our teeth regularly. The nature of the tooth paste commonly used is

- (a) acidic
- (b) neutral
- (c) basic
- (d) corrosive

Mathematics

Q1. In $\triangle ABC$, $DE \parallel BC$, $AD:DB = 2:3$ and $AC = 18\text{cm}$ find the length of AE .

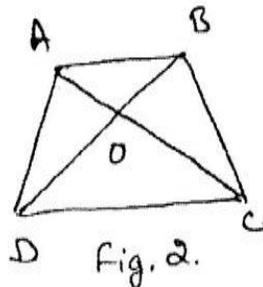
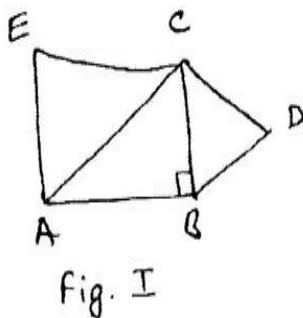
Q2. Any point X is taken in the base BC of $\triangle ABC$, XM and XN are drawn parallel to BA , CA meeting CA , BA in M , N respectively. MN meets CB produced in T . Prove that $TB \times TC = TX^2$.

Q3. From the side PQ of $\triangle PQR$ cut off segments $PL = QS$. Draw $LM \parallel QR$ and $ST \parallel PR$. Show that $MT \parallel PQ$.

Q4. The bisector of $\angle B$ and $\angle C$ of an isosceles $\triangle ABC$, meets the sides AC and AB in D and E respectively. Prove that $DE \parallel BC$.

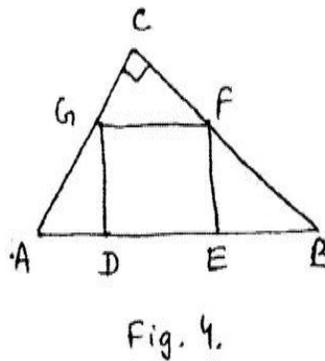
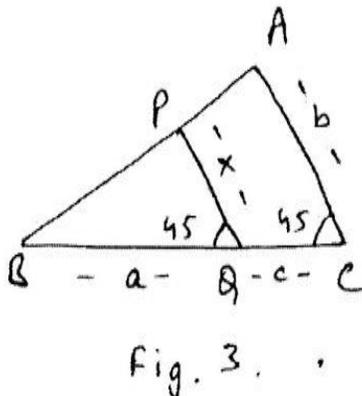
Q5. ABC is an isosceles triangle right angled at B . Two equilateral triangles are constructed with side BC and AC as shown in figure 1. Prove that area of $\triangle BCD = \frac{1}{2}$ Area of $\triangle ACE$

Q6. In figure 2 $2 \frac{AO}{OC} = \frac{OB}{OD} = \frac{1}{2}$, $AB = 5\text{cm}$, Find DC



Q7. In figure 3, Express 'x' in terms of a, b and c.

Q8. In given in figure 4, $DEFG$ is square and $\angle C = 90^\circ$. Prove that $DE^2 = AD \cdot EB$



Q9. In the given figure 5, $PA \parallel QB \parallel RC$. Prove that $\frac{1}{x} + \frac{1}{y} + \frac{1}{z}$

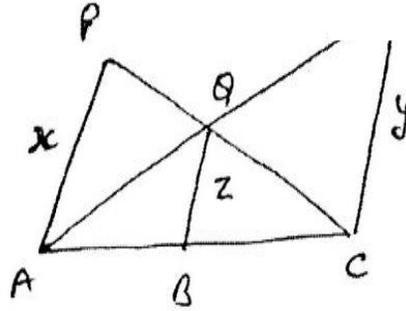


Fig. 5

Q10. In $\triangle ABC$, AD is the median. DE is the bisector of $\angle ADB$. $EF \parallel BC$. Prove that $\angle EDF$ is a right angle.

Q11. In $\triangle ABC$, AD is the median. P is the mid point of AD. BP when produced meet AC in Q prove that $AQ = \frac{1}{3} AC$.

Q12. Prove that three times the sum of the squares of the sides of triangle is equal to four times the sum of the squares of the medians of the triangle.

Q13. In parallelogram ABCD, P is the point on side BC and DP when produced meets AB produced at L. Prove that (i) $DP : PL = DC : BL$ and (ii) $DL : DP = AL : DC$.

Q14. In $\triangle ABC$, $DE \parallel BC$. If $DE = 4$ cm, $BC = 8$ cm and $\text{ar } \triangle ADE = 25 \text{ cm}^2$, Find $\text{ar } \triangle ABC$.

Q15. In $\triangle ABC$, BS is bisected at D, AD is bisected at E and BE is produced to meet AC in F, prove that (i) $3AF = AC$ and (ii) $4EF = BF$

Q16. In $\triangle ABC$, $AD \perp BC$ such that $AD^2 = BD \times DC$. Prove that $\angle BAC = 90^\circ$

Q17. Equilateral triangles are drawn on sides of right angle \triangle . Show that area of \triangle on the hypotenuse is equal to sum of the areas of equilateral \triangle 's on the other sides.

Q18. In trapezium ABCD, $AB \parallel DC$ and $DC = 2AB$, EF is drawn parallel to AB cuts AD in F and BC in E such that $BE : EC = 3 : 4$. Show that $7FE = 10AB$.

Q19. ABCD is a square. F is the mid point of AB and $BE = \frac{1}{3} BC$. If the area $\triangle FBE = 108 \text{ cm}^2$, find AC.

Q20. In $\triangle ABC$, $\angle C = 90^\circ$. Q is the mid point of BC. Prove that $BC^2 = 4(AQ^2 - AC^2)$.

Sanskrit

ग्रीष्मावकाश गृहकार्य— दशम्

- 1— गूगल में (संस्कृत स्टोरी) खोजकर अपने मन पसंद की कोई तीन कहानी संस्कृत एवं हिन्दी अनुवाद सहित लिखिए।
- 2— डी.डी. न्यूज पर प्रत्येक शनिवार सायं 7:30 बजे तथा रविवार दोपहर 12:30 बजे प्रसारित होने वाले कार्यक्रम वार्तावली को देखकर कार्यक्रम के विषय में दस वाक्य संस्कृत में लिखिए। कार्यक्रम में संस्कृत में अनुवाद किया गया कोई एक संस्कृत गीत भी लिखिए।
(वार्तावली कार्यक्रम गूगल में भी सर्च किया जा सकता है।)
- 3— संस्कृत के किन्ही तीन प्रसिद्ध कवियों/रचनाकारों का सचित्र परिचय तथा उनकी रचनाओं के नाम लिखिए।
- 4— समास के सभी भेदों को उदाहरण सहित दर्शाइए। (चार्ट पेपर)

विषय हिन्दी

गतिविधि—

- क. हिन्दी के मनपसन्द उपन्यास पढ़िए और किसी एक उपन्यास को संक्षेप में(ए फोर साईज शीट) पर लिखिए— (अनुक्रमांक 1से 05)
अपनी मनपसन्द स्कूल मैगजीन कवर सहित बनाइए — (अनुक्रमांक 6से10तक)
- ख. हिन्दी के प्रसिद्ध पाँच कवियों के जीवन,कार्य और उनकी कोई एक कविता सुन्दर लेख में चार्ट पर लिखिए— (अनुक्रमांक 11से 15)
- ग. प्रसिद्ध पाँच लेखकों के जीवन,कार्य और रचनाओं के बारे में पूर्ण एकत्रित कर चार्ट पर कोलार्ज बनाएँ। (अनुक्रमांक 16से 20)
- घ. प्रतिदिन हिन्दी समाचार देखिए और पढ़िए किसी एक मुख्य समाचार के प्रति अपनी प्रतिक्रिया व्याकरण कॉपी में लिखकर व्यक्त कीजिए। (अनुक्रमांक 21से 25)
- ङ. सामाजिक समस्याओं से संबंधित नुक्कड़ नाटक लिखिए— (अनुक्रमांक 26से 30)
- च. 'वृक्षों से होने वाले लाभ' पर एक डॉक्यूमेंट्री फिल्म बनाइए— (अनुक्रमांक 31से35)
- छ. 'किसी एक सामाजिक समस्या पर 'पी0 पी0 टी0 बनाइए। (अनुक्रमांक 36से अंतिम अनुक्रमांक तक)
- ज. सभी पाठों को ध्यानपूर्वक पढ़िए व कराए गए पाठ्यक्रम की पुनरावृत्ति कीजिए तथा 'स्कूल मैगजीन' हेतु दो लेख व स्वरचित कविता ,कहानी(ए फोर साईज शीट) पर अवश्य लिखकर लाएँ।

SOCIAL SCIENCES (Disaster Management)

Make a Project Report on the following topics pertaining to Earthquake:

1. Safe construction practices in an earthquake prone zone. (Roll no. 1 – 10)
2. Report on earthquake occurred in Nepal on 25th April 2015 and 12th May 2015, highlighting the reasons and steps taken for rehabilitation. (Roll no. 11- 20)
3. Survival skills (Dos and Don'ts) during earthquake. (Roll no. 21 to 34)
4. Instructions:

- It's an individual project.
- Presentation should be of 5-10 pages neatly written on A4 coloured sheets.
- Use pictures, tables and newspaper articles
- The project has to be handwritten and should be submitted in a proper file.
- Distribution of marks over different aspects relating to Project work is as follows:
 - Content, accuracy and originality: 1 mark
 - Presentation and creativity: 1 mark
 - Process of project completion: 1 mark
 - Viva or written test for content assimilation: 2 marks