



## **WINTER HOLIDAY HOMEWORK 2017-18**

### **CLASS-XI**

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# ENGLISH

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## General Instructions:

- i. All questions are compulsory.
  - ii. All parts of questions should be attempted at one place.
  - iii. Show your working clearly. They carry marks.
  - iv. To Be Submitted on 16<sup>th</sup> January 2018.
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## Q.1 Read the following passage and answer the questions given below:

Punctuality is a necessary habit in all public affairs of a civilized society. Without it nothing could ever be brought to a conclusion, everything would be in a state of chaos. Only in a sparsely populated rural community it is possible to disregard it. In ordinary living there can be some tolerance of unpunctuality. The intellectual, who is working on some abstruse problem, has everything coordinated and organized for the matter in hand. He is therefore forgiven if late for the dinner party. But people are often reproached for unpunctuality when their only fault is cutting things fine. It is hard for energetic, quick minded people to waste time so they are often tempted to finish a job before setting out to keep an appointment. If no accident occurs on the way, like punctured tyres, diversion of traffic, sudden descent of fog, they will be on time. They are often more industrious and useful than those who are never late. The over-punctual can as much be a trial to others as the unpunctual. The guest who arrives half an hour too soon is the greatest nuisance. Some friends of my family had this irritating habit. The only thing to do was to ask them to come half an hour later than the other guests. Then they arrived just when we wanted them.

If you are catching a train, it is always better to be comfortably early than even a fraction of a minute too late. Although being early may mean wasting a little time, this will be less than if you miss the train and have to wait an hour or so for the next one. And you avoid the frustration of arriving at the very moment when the train is drawing out of the station and being unable to get on it. And even a harder situation is to be on the platform in good time for a train and still to see it go off without you. Such an experience befell a certain young girl the first time she was travelling alone

She entered the station twenty minutes before the train was due, since her parents had impressed upon her that it would be unforgiveable to miss it and cause the friends with whom she was going to stay to make two journeys to meet her. She gave her luggage to a porter and showed him her ticket. To her horror he said that she was two hours too soon. She felt in her handbag for the piece of paper on which her father had written down all the details of the journey and gave it to the porter. He agreed that a train did come in the station at the time on the paper and that it did stop, but only to take on water, not passengers. The girl asked to see a time-table, feeling sure that her father could not have made such a mistake. The porter went to fetch one and arrived back with the station-master, who produced it with a flourish and pointed out a microscopic 'o' beside the time of the arrival of the train at his station. This little 'o' indicated that the train only stopped for water. Just at that moment the train came into the station. The girl, tears streaming down her face, begged to be allowed to slip into the guard's van. But the station-master was adamant: rules cannot be broken. And she had to watch that train disappear towards her destination while she was left behind.

a) Answer the following questions briefly: (9)

- (i) Why is punctuality necessary in a civilized society?
- (ii) What are the dangers of leaving the bare minimum of time for appointments?
- (iii) The over-punctual can be as much a trial to others as the unpunctual. Why?
- (iv) Why did the author's family ask some guests to come half-an hour later than others?
- (v) Why, according to the author, is it better to wait on the platform before the train arrives?
- (vi) Select three appropriate expressions from the passage to prove that the author wants punctuality to be observed in life.

- b) Find words in the passage which mean the same as:
- (i) Blamed (para 1)
  - (ii) Hardworking (para 1)
  - (iii) Thinly (para1)

Q.3 Read the following passage carefully and answer the questions that follow:

Whether work should be placed among the causes of happiness or unhappiness, may perhaps be regarded as a doubtful question. There is certainly much work which is exceedingly irksome, and an excess of work is always very painful. However, work is not to most people more painful than idleness. There are grades in work, from mere relief from tedium up to the profoundest delights, according to the nature of the work and the abilities of the worker. Most of the work that most people have to do is not in itself interesting but even such work has certain great advantages.

To begin with, it fills a good many hours of the day without the need of deciding what one shall do. Most people, when they are left free to fill their own time according to their choice are at a loss to think of anything sufficiently pleasant to be worth doing. And whatever they decide on, they are troubled by the feeling that something else would have been more pleasant. To be able to fill leisure intelligently is the last product of civilization and at present very few people have reached this level. Moreover, the exercise of choice is in itself tiresome. Except to people with unusual initiative, it is positively agreeable to be told what to do at each hour of the day, provided the orders are not too unpleasant. Most of the idle rich suffer unspeakable boredom as the price of their freedom from drudgery. At times they may find relief by hunting big game in Africa or by flying around the world, but the number of such sensations is limited, especially after youth is past. Accordingly, the more intelligent rich men work nearly as hard as if they were poor.

Work, therefore is desirable, first and foremost as a prevention of boredom, for the boredom that a man feels when he is doing something out of compulsion; though uninteresting work is as boring as have nothing to do. With this advantage of work, another is associated, namely that it makes holidays much more delicious when they come. Provided a man does not have to work so hard as to impair his vigour, he is likely to find more zest in his free time than an idle man could possibly find.

The second advantage of most paid work and some of unpaid work is that it gives chances of success and opportunities for ambition. In most work, success is measured by income and while our capitalistic society continues, this is inevitable. However, dull work may be, it becomes bearable, if it a means of building up a reputation. Whatever we do should have a purpose. It should not be just like boiling an egg if having nothing to do. It no way contributes to the reputation too, rather makes you a dull head. A work should not just be done for the sake of doing. At the end of the task it should create a spark of feeling that yes, we have done something.

What's the use of flipping channels on the television where there is no stuff for you to see? It will only add to the boredom. That time could be invested in some meaningful task, say, for instance, in making card for a dear one or spending time with our family or friends. It will cheer up their minds and seeing their faces glow, wouldn't you feel happy too! So, it's not just work that matters but the purpose of the work matters more. So, from now on, if you plan a work, plan a purpose too. Continuity of purpose is one of the most essential ingredients of happiness and that comes chiefly through work.

- a) On the basis of your reading of the above passage, make notes on it, using headings and sub-headings. Use recognizable abbreviations(whenever necessary--- minimum four) and a format you consider suitable.
- b) Write a summary of the passage in not more than 80 words using the notes and also suggest a suitable title.

#### **SECTION-B (ADVANCED WRITING SKILLS)**

Q.3 You are Abhinav / Abha. You have planned a two week course to be arranged to help the children of your Group Housing Society at Kanpur acquire oral communication skills. Prepare a notice for the society's notice board, stating the objectives of the course, giving its necessary details and requesting the children of the society to join it.

Q.4. You are Anil / Anu Sharma, the Physical Education Teacher of DAV Public School, Ambala. Last month you placed an order for the supply of a few sports goods with Messrs. Pioneer Sports, Meerut. On receiving the supply, you found that some items were short in number while some others were defective. Write a letter of complaint to the supplier detailing all the shortages and defects

**SECTION-C (GRAMMAR)**

Q.5. The following passage has not been edited. There is one error in each line. Underline the error and write the correct word in front of it in your answer sheet. The first one has been done for you as an example.

The next day during an break	e.g.	an	the
when all the teacher and students	(a)	.....	.....
was eating their snacks, the mother	(b)	.....	.....
left the school building hurriedly.	(c)	.....	.....
The boy saw him walking	(d)	.....	.....
quickly from of the school gate	(e)	.....	.....
when he was drank water after	(f)	.....	.....
his meal and wonder where	(g)	.....	.....
his mother is going	(h)	.....	.....

Q.6. Correct errors in the following sentences and rewrite the correct sentences.

- The mother got after early in the morning.
- The next day was an holiday.
- He believed that all religions were one.
- He told me that he finished his work.

Q.7. Rearrange the following words or phrases to make meaningful sentences :

- the / on / forests / the / industry / oil / depends
- do / get / the / forests / from / what / we / products / ?

**SECTION-D- LITERATURE-**

Q.8. Answer the questions in 40 – 50 words:

- a). How was the child revived?
- b). How did Dr. Andrew save Mrs. Morgan's life?
- c) . What was the advice of the wisest man to the King about the issue?

Q.9. What does the blood stain that appears persistent signify in the context of the story 'The Canterville Ghost'? Answer in about 150 words.

Q.10. What elaborate preparations did the ghost make for his August 17 performance? Did it achieve the desired effect? Write your answer in about 130 words.

# PHYSICS

## General Instructions

- Assignment is to be done on A4 size sheets .
- Holiday Homework must be submitted on 16<sup>th</sup> January,2018

1. It is easier to pull a lawn roller than to push it. Explain using the resolution of forces.
2. Mention two advantages of 'I' shape of iron beams used in building construction.
3. The kinetic energy of a body is increased by 21%. What is the percentage increase in the linear momentum of the body?
4. Mention two factors on which the moment of inertia of a body depends. A particle performing uniform circular motion has angular momentum L. What will be the new angular momentum if its angular frequency is doubled and its kinetic energy halved?
  - (a) Why young's modulus and shear modulus are relevant only for solids?
  - (b) What is the value of modulus of rigidity for a liquid?
  - (c) Explain why the blood pressure in humans is greater at the feet than at the brain.
  - (d) Explain why we should blow over the paper to keep it horizontal.
  - (e) When an air bubble rises in water, what happens to its potential energy?
5. A uniform chain of mass, m and length, l is held on a frictionless table such that one
6. third of its length hangs over the edge. Calculate the work done to pull the hanging
7. part of the chain back on the table?
8. Draw a graph showing variation of potential energy, kinetic energy and the total energy of a body freely falling on earth from a height h?
  - (a) A cat is able to land on its feet after a fall. Why?
  - (b) If angular momentum moment of inertia is decreased, will its rotational K E. be also conserved? Explain.
9. Derive the following relation for a real image formed by a convex refracting surface when the object is placed in rarer medium. Also write the assumptions and sign convention used.
10. Draw a ray diagram to show the image formation in refracting type astronomical telescope in the near point adjustment (when image is formed at LDDV i.e. D=25cm). Derive an expression for its magnifying power. Why the diameter of objective of telescope should be large.
11. Find the conditions for constructive and destructive interference. How does the intensity depend on the width of slit? 6. Find the expression for the fringe width. What is the effect on the fringe width if the whole apparatus (YDSE) is completely immersed in a liquid of refractive index  $\mu$ ?
12. Define TIR and write the conditions for TIR. Derive a relation between critical angle and the refractive index of the medium. Also explain the working of isosceles prism and optical fiber .
13.
  - (a) How does the focal length of a convex lens change if monochromatic red light is used instead of monochromatic blue light?
  - (b) Sketch the refracted wavefront emerging from a convex lens if a plane wavefront is incident normally on it.
  - (c) The refractive index of the material of a concave lens is  $n_1$  .It is immersed in a medium of refractive index  $n_2$ .A parallel beam of light is incident on the lens. Trace the path of emergent rays when  $n_2 < n_1$  .

# CHEMISTRY

## General Instructions :

- i. All questions are compulsory.
- ii. All parts of questions should be attempted at one place.
- iii. Show your working clearly. They carry marks.
- iv. To Be Submitted on 16<sup>th</sup> January 2018.

## REDOX REACTIONS AND S-BLOCK ELEMENTS

1. Assign the oxidation number to the underline elements in each of the following species  
a)  $\text{NaH}_2\text{PO}_4$    b)  $\text{SO}_4^{2-}$    c)  $\text{LiAlH}_4$    d)  $\text{Cr}_2\text{O}_7^{2-}$
2. Hydrogen peroxide behaves as oxidizing agent as well as reducing agent. Why?
3. What is salt bridge? Give its two uses.
4. Nitric acid behaves as good oxidizing agent while nitrous acid acts as both oxidant and reductant. Explain.
5. If SHE acts as anode and given metal acts as cathode, what is the sign of reduction potential of metal?
6. Balance the following equation in basic medium by ion electron method;  
 $\text{Cl}_2\text{O}_7(\text{g}) + \text{H}_2\text{O}_2(\text{aq}) \rightarrow \text{ClO}_2^-(\text{aq}) + \text{O}_2(\text{g})$
7. Identify the substance oxidized, reduced, oxidizing agent and reducing agent;  
( on the basis of change in oxidation no.)  
 $\text{N}_2\text{H}_4(\text{l}) + 2\text{H}_2\text{O}_2(\text{l}) \rightarrow \text{N}_2(\text{g}) + 4\text{H}_2\text{O}(\text{l})$   
 $4\text{NH}_3(\text{g}) + 5\text{O}_2(\text{g}) \rightarrow 4\text{NO}(\text{g}) + 6\text{H}_2\text{O}(\text{l})$
8. The standard potentials of few metals are given below;  
 $\text{Al}(-1.66\text{V})$ ,  $\text{Cu}(+0.34\text{V})$ ,  $\text{Ag}(+0.80\text{V})$ ,  $\text{Fe}(-0.44\text{V})$ ,  $\text{Mg}(-2.37\text{V})$   
Which of these behave as strongest oxidizing agents & which as the strongest reducing agent?
9. What is disproportionation reaction? Identify the element which undergoes disproportionation in the following equation-  $\text{P}_4 + 3\text{NaOH} + 3\text{H}_2\text{O} \rightarrow \text{PH}_3 + 3\text{NaH}_2\text{PO}_2$
10. The cell is  $\text{Mg} / \text{Mg}^{2+}(\text{aq}) // \text{Al}^{3+}(\text{aq}) / \text{Al}$ 
  - a. The reduction potential of these two half cells are  $-2.36\text{V}$  &  $-1.66\text{V}$  respectively.
  - b. Calculate the cell potential. Write the cell reaction also.
11. Balance the following equations by ion electron method;
  - a.  $\text{Cr}_2\text{O}_7^{2-} + \text{H}^+ + \text{Fe}^{2+} \rightarrow \text{Cr}^{3+} + \text{Fe}^{3+} + \text{H}_2\text{O}$
  - b.  $\text{AsO}_3^{3-} + \text{IO}_3^- \rightarrow \text{AsO}_4^{3-} + \text{I}^-$
12. An iron rod is immersed in a solution containing  $\text{NiSO}_4$  and  $\text{ZnSO}_4$ . When the concentration of each salt is  $1\text{M}$ , predict giving reasons which of the following reaction is likely to proceed ?
  - a. Iron reduces  $\text{Zn}^{2+}$  ions   b) iron reduces  $\text{Ni}^{2+}$  ions( Given  $E^0_{(\text{Zn}^{2+}/\text{Zn})} = -0.76\text{V}$ ,  $E^0_{(\text{Fe}^{2+}/\text{Fe})} = -0.44\text{V}$ ,  $E^0_{(\text{Ni}^{2+}/\text{Ni})} = -0.25\text{V}$ )
13. Account for the following;
  - a. Sodium is not stored under water.

- b. The ionization enthalpy of alkali metal is very low.
  - c. Alkali metals can be prepared by electrolytic reduction method only.
  - d. Be & Mg do not impart colour to the flame
  - e. Alkali metals can not be prepared by the electrolysis of aqueous solution.
  - f. Sodium is less reactive than potassium.
14. Potassium and cesium rather than lithium used in photo voltaic cell.
15. Why does lithium behave differently than the other elements in this group?
16. Why does lithium resemble magnesium?
17. Why is the solution of an alkali metal in ammonia blue?
18. The solutions of alkali metals in ammonia are blue coloured and conducting. Explain.
19. State what happens when
- (i) Sodium burns in air
  - (ii) Sodium is exposed to air
  - (iii) Sodium reacts with water
20. Why is sodium carbonate solution basic in nature?
21. Why are the hydration enthalpies of alkaline earth metal ions much larger than those for the alkali metal ions?
22. Draw the structures of
- (a) Solid beryllium chloride
  - (b) Solid aluminum chloride
23. Why is  $\text{Li}_2\text{CO}_3$  decomposed at a lower temperature whereas  $\text{Na}_2\text{CO}_3$  at higher temperature?
24. Draw the structure of
- (i)  $\text{BeCl}_2$  (vapour)
  - (ii)  $\text{BeCl}_2$  (s)
25. Explain the following ;
- a. NaOH can be stored in the container of Aluminium.
  - b. Lithium salts are commonly hydrated and those of other alkali metal ions are usually
26. anhydrous.
- a. LiI is more soluble than KI in ethanol.

# BIOLOGY

## General Instructions:

- (i) All questions are compulsory.
- (ii) All parts of questions should be attempted at one place.
- (iii) Show your working clearly. They carry marks.
- (iv) To Be Submitted on 16<sup>th</sup> January 2018.

## Biology Holiday Home work

1. Which part of the root is related with the absorption of water ?
2. What makes the raisins to swell up when kept in water ?
3. Define water potential. What is the water potential of pure water?
4. What will happen to water potential when a solute is added to water ?
5. A plant cell when kept in a solution got plasmolysed. What was the nature of the solution ?

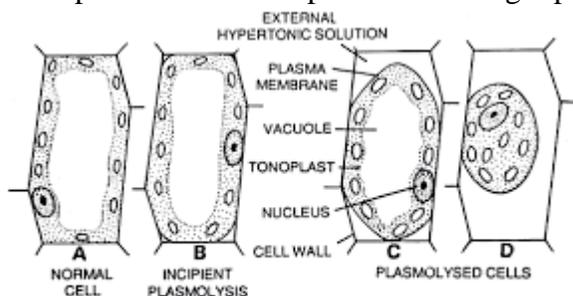


Fig. 2.9. Plasmolysis. Stages in plasmolysis of a plant cell.

6. Mention two ways of absorption of water in plants.
7. Which form of sugar is transported through phloem ?
8. Give one example of imbibition.
9. A flowering plant is planted in an earthen pot and irrigated. Urea is added to make the plant grow faster, but after some time the plant dies. Give its possible reason.
10. Why is energy required to develop root pressure ?

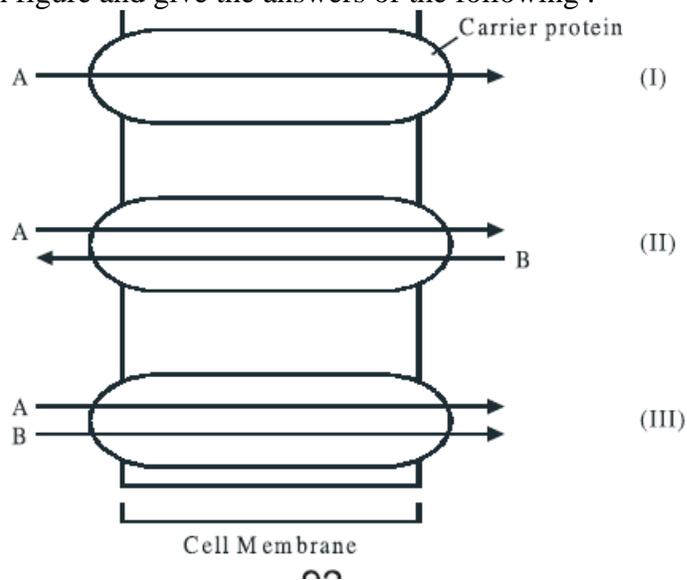
### Short Answer Questions-II (2 marks each)

11. A well watered potted herbaceous plant shows wilting in the afternoon of a dry sunny day. Give reason.
12. Do different species of plants growing in the same soil show the same rate of transpiration of a particular time ? Justify your answer.
13. What is casparian strip ? Write its significance in plants.
14. Xylem transport is unidirectional and phloem transport bi-directional. Why ?
15. How is transpiration different from guttation ? Give two points.
16. Write the chemical composition of xylem and phloem sap.

### Short Answer Questions-I (3 marks each)

17. When any dry plant material or seeds are kept in water, they swell up.
  - a) Name the phenomenon involved in this change.
  - b) Define this phenomenon.
  - c) Give two conditions essential for the phenomenon to occur.

18. Plants show temporary and permanent wilting. Differentiate between the two. Do any of them indicate the water status of the soil ?
19. What is mycorrhiza ? How is the mycorrhizal association helpful in absorption of water and minerals in plants ?
20. Observe the given figure and give the answers of the following :



- Identify the process occurring in (I), (II) and (III).
  - Differentiate between the process II and III.
  - How many types of aquaporins form the water channels in the cell membrane.
21. Give the scientific term for the following statements/processes :
- Movement of water in roots through the cell wall exclusively.
  - The positive hydrostatic pressure developed inside the cell or cell wall.
  - A solution having relatively less concentration.
  - Loss of water vapour from the aerial parts of the plants in the form of water vapour.
  - Movement of a molecule across a membrane independent of other molecule.
  - Water loss in its liquid phase through the special openings of veins near the tip of leaves of many herbaceous plants.

**Long Answer Questions (5 marks each)**

- Minerals are present in the soil in sufficient amount. Do plants need to adjust the types of solutes that reach the xylem ? Which molecules help to adjust this ? How do plants regulate the type and quantity of solutes that reach xylem. How do plants absorb water ? Explain transpiration pull model in this regard.
23. (a) Describe the pressure flow hypothesis of translocation of sugar in plants.  
 (b) Explain the mechanism of closing and opening of stomata.

# MATHEMATICS

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## General Instructions :

- (i) All questions are compulsory.
  - (ii) All parts of questions should be attempted at one place.
  - (iii) Show your working clearly. They carry marks.
  - (iv) To Be Submitted on 16<sup>th</sup> January 2018.
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1. Show that  $3x^2 + 4y^2 - 12x - 8y + 4 = 0$  represents an ellipse. Find its centre, eccentricity, vertices, foci, length of latus rectum & equations of directrices
2. Show the  $16x^2 - 3y^2 - 32x - 12y - 44 = 0$  represents a hyperbola. Find the coordinates of centre, foci, vertices, eccentricity, length of latus rectum and equations of directrices
3. Find the equation of the circumferences of the triangle whose sides lie along the lines  
 $x + y = 6$ ,  $2x + y = 4$  &  $x + 2y = 5$
4. Find equation of the circle which is concentric with the circle  $x^2 + y^2 - 2x + 1 = 0$  and passes through the center of the circle  $x^2 + y^2 - 8x - 4y = 41$
5. An equilateral triangle is inscribed in the parabola  $y^2 = 4ax$ , where one vertex is at the vertex of the parabola. Find the length of side triangle

### Evaluate the following limits

6.  $\lim_{x \rightarrow 1} \left( \frac{1}{x^2 + x - 2} - \frac{x}{x^3 - 1} \right)$
7.  $\lim_{x \rightarrow 0} \left( \frac{\sqrt{1+x} - \sqrt{1-x}}{x} \right)$
8.  $\lim_{x \rightarrow 0} \left( \frac{x^2 + 1 - \cos x}{x \sin x} \right)$
9.  $\lim_{x \rightarrow a} \left( \frac{\cos x - \cos a}{\sqrt{x} - \sqrt{a}} \right)$
10.  $\lim_{x \rightarrow 0} \left( \frac{\sin^2 3x}{\sin^2 7x} \right)$

### Find the derivative for the following

11.  $y = \sqrt{\tan x} + \cos x^2$
12.  $y = x \sin 2x \cos 4x$
13.  $y = \sqrt{\frac{\sec x - \tan x}{\sec x + \tan x}}$
14.  $y = \sqrt{\frac{\sec x - 1}{\sec x + 1}}$
15.  $y = \cos(\sin x^2) + \sin(\cos x^3)$

### Find the derivative using first principle

16.  $f(x) = x \cos x$
17.  $y = \sin \sqrt{x}$
18.  $y = \frac{1+3x}{1-x}$
19.  $y = \cos 2x$
20.  $y = \sqrt{\sin x}$
21. Find the probability of getting a total of more than 10 in a single throw of dice
22. From a deck of 52 cards, 4 cards are drawn simultaneously. What are the chances that they are i) All aces ii) Same suit
23. Three coins are tossed at once. What is the probability of getting i) at least 2 heads ii) At most 2 tails  
 $P(A) = 0.42$ ,  $P(B) = 0.48$ ,  $P(A \& B) = 0.16$  find i)  $P(\text{Not } A)$  ii)  $P(A \text{ or } B)$  iii)  $P(A' \cap B')$
24. 3 of the 6 vertices of a regular hexagon are chosen at random. Find the probability of getting a triangle which is equilateral.

# ENGINEERING GRAPHICS

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## General Instructions :

- (i) **All questions are compulsory.**
- (ii) **All parts of questions should be attempted at one place.**
- (iii) **Show your working clearly. They carry marks.**
- (iv) **To Be Submitted on 16<sup>th</sup> January 2018.**

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## ISOMETRIC PROJECTION OF COMBINATION OF SOLIDS

1. A regular hexagonal prism of base side 30mm and length 100mm, is resting on one of its rectangular faces on the HP, with its axis parallel to HP and VP. A cylinder of base diameter 42mm and height 65mm, with its axis perpendicular to HP, is resting centrally on it. Draw its isometric projection. Give all dimensions.
2. A frustum of an equilateral triangular pyramid, base side 58mm, top side 32mm and height of frustum 65mm, is having a base side parallel to VP and nearer the observer. It is centrally placed on the top of a cylindrical disc of base diameter 90mm and height 48mm, resting on its base on HP. Draw its isometric projection, keeping their common axis vertical. Give dimensions.
3. A hemisphere of diameter 84mm, is having its circular face, parallel to HP on the upper side. An equilateral triangular prism of base side 40 mm and length 50mm, with its axis perpendicular to VP, is resting centrally on it, on one of its rectangular faces. Draw its isometric projection. Give all dimensions.
4. A hemisphere of diameter 84mm, is having its circular face, parallel to HP on the upper side. A regular pentagonal prism of base side 24 mm and height 55mm, is resting centrally on it, with a base side, away from the observer, parallel to VP and their axis perpendicular to HP. Draw its isometric projection. Give all dimensions.
5. A pentagonal prism with side 40mm and height 80mm, is centrally placed with its pentagonal end on the top circular face of a cylindrical disc with a diameter of 100mm and thickness 40 mm. One side of the pentagonal end at the bottom is normal to VP, and common axis is normal to HP and parallel to VP. Draw an isometric projection of the two solids, placed together. Give all dimensions.
6. A cone with base diameter 50mm and height 80mm is centrally placed with its circular base on the square top surface (top side 60mm) of the frustum of a square pyramid (bottom side 80 mm) and height 70 mm. Keeping the common axis vertical and two parallel sides of the bottom surface of the frustum, parallel to VP, draw an isometric projection of the two solids, placed together. Give all dimensions.
7. A pentagonal prism with side of the pentagonal base=40 mm and height of axis=30mm is resting on H.P. on its base, with one of its sides normal to V.P. On the top pentagonal end, a cylinder of 50 mm diameter base and height 70 mm, is centrally placed with its circular base on it. Taking their common axis perpendicular to H.P., draw an isometric projection of solids. Give all dimensions.
8. A hexagonal prism with base side =30 mm and height =40 mm is resting on H.P. on its hexagonal base. One of its base sides is parallel to V.P. On the top hexagonal end, a sphere of 25 mm radius is centrally placed. Taking their common axis perpendicular to H.P., draw the isometric projections of the two solids. Give all dimensions.
9. A slab in the form of an equilateral triangular prism, with a base side of 90 mm and height of 30 mm, is resting with its triangular end on H.P. One base side is being parallel to V.P. and closer to observer. A hemisphere of diameter 80 mm, is centrally placed on the top triangular end of the slab, with its curved surface on it. Draw an isometric projection of the two solids, placed together, keeping their common axis vertical, to the isometric scale. Give all dimensions.
10. An equilateral triangular pyramid, base side 40 mm and height 70 mm, is centrally placed on its base, keeping one of its base side perpendicular to V.P., on the pentagonal end of a regular pentagonal prism, whose base side is 50 mm and height 30 mm. One of the base side of the prism, is kept parallel to V.P. and away from it. The common axis is perpendicular to H.P. and parallel to V.P. Draw an isometric projection of the two, placed together, to isometric scale . Give all dimensions.
11. A cone (base diameter=50mm and height= 70mm) is resting, centrally, on the top triangular face of an equilateral (side=80mm and height = 30mm) with the circular base on it. One of the sides (80mm) of the triangular face, on HP, is parallel to VP and away from it. The common axis of the solids is perpendicular to HP. Draw the isometric projection of the solids to an isometric scale. Draw the common axis and indicate the direction of viewing. Give all dimensions.
12. A hemisphere (diameter=70mm) is centrally placed, with its circular face up, on a hexagonal prism (base edge=30mm and height =40mm), on its hexagonal face. Two of the opposite base edges of the hexagonal face, on HP, are perpendicular to VP. The common axis is perpendicular to HP and parallel to VP. Draw the isometric projection of the solids to an isometric scale. Draw the common axis and indicate the direction of viewing. Give all dimensions.

# COMPUTER SCIENCE

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## General Instructions :

- (i) All questions are compulsory.
  - (ii) All parts of questions should be attempted at one place.
  - (iii) Show your working clearly. They carry marks.
  - (iv) To Be Submitted on 16<sup>th</sup> January 2018.
- 

1 Write a C++ program to find the sum and average of one dimensional integer array.

2 Write a C++ program to swap first and last element of an integer 1-d array.

3 Write a C++ program to reverse the element of an integer 1-D array.

4 Write a C++ program to find the largest and smallest element of an array.

5 Write a menu driven C++ program with following option

- a. Accept elements of an array
- b. Display elements of an array
- c. Find the smallest number in the array

Write C++ functions for all options. The functions should have two parameters name of the array and number of elements in the array.

6 P is one-dimensional array of integers. Write a C++ function to efficiently search for a data VAL from P. If VAL is present in the array then the function should return value 1 and 0 otherwise.

7 Suppose a one-dimensional array AR containing integers is arranged in ascending order. Write a user-defined function in C++ to search for an integer from AR with the help of Binary search method, returning an integer 0 to show absence of the number and integer 1 to show presence of the number in the array. Function should have three parameters : (i) array AR (ii) the number to be searched and (iii) the number of elements N in the array.

8 Suppose A, B, C are arrays of integers of size M, N, and M + N respectively. The numbers in array A appear in ascending order while the numbers in array B appear in descending order. Write a user defined function in C++ to produce third array C by merging arrays A and B in ascending order. Use A, B and C as arguments in the function.

9 Suppose X, Y, Z are arrays of integers of size M, N, and M + N respectively. The numbers in array X and Y appear in descending order. Write a user-defined function in C++ to produce third array Z by merging arrays X and Y in descending order.

10 Given two arrays of integers A and B of sizes M and N respectively. Write a function named MIX () with four arguments, which will produce a third array named C. such that the following sequence is followed. All even numbers of A from left to right are copied into C from left to right. All odd numbers of A from left to right are copied into C from right to left. All even numbers of B from left to right are copied into C from left to right. All old numbers of B from left to right are copied into C from right to left. A, B and C are passed as arguments to MIX (). e.g., A is {3, 2, 1, 7, 6, 3} and B is {9, 3, 5, 6, 2, 8, 10} the resultant array C is {2, 6, 6, 2, 8, 10, 5, 3, 9, 3, 7, 1, 3}

# ECONOMICS

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## General Instructions :

- (i) All questions are compulsory.
  - (ii) All parts of questions should be attempted at one place.
  - (iii) Show your working clearly. They carry marks.
  - (iv) To Be Submitted on 16<sup>th</sup> January 2018.
- 

- Q.1. Define a worker ?
- Q.2. What is meant by disguised unemployment?
- Q.3. Name any two indicators of educational achievement in India.
- Q.4. Literacy rates in India has increased but so has absolute number of illiterates. Why?
- Q. 5. Why are women, in general, and urban women, in particular, not working?
- Q.6. Differentiate between a formal sector and an informal sector.
- Q.7. How does jobless growth happen? Explain with the help of an example.
- Q.8. Can a concrete relation between Human capital Formation and Economic growth be established?  
Give reasons.
- Q.9. What is the reason of the declining poverty in rural areas?
- Q.11. What is multiple correlation?
- Q.12. What is the range of simple correlation coefficient?
- Q.13. Give the formula of Standard deviation by step deviation method.
- Q.14. What are the various degrees of correlation between two variables?
- Q.15. Draw a scatter diagram of the following data and interpret to find the nature of correlation.
- |    |    |    |    |    |    |    |    |    |
|----|----|----|----|----|----|----|----|----|
| X: | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 |
| Y: | 40 | 35 | 30 | 25 | 20 | 15 | 10 | 5  |
- Q.16. The scores of two batsmen A and B in five innings during a certain match are :
- |   |    |    |    |    |    |
|---|----|----|----|----|----|
| A | 32 | 28 | 47 | 63 | 71 |
| B | 19 | 31 | 48 | 53 | 67 |
- Find out who is a better scorer and who is more consistent batsman?
- Q.17. Find the coefficient of variation from the following data:
- |                 |       |       |       |       |       |
|-----------------|-------|-------|-------|-------|-------|
| Class Interval: | 10-20 | 20-30 | 30-40 | 40-50 | 50-60 |
| Frequency :     | 24    | 36    | 42    | 30    | 20    |

# ACCOUNTANCY

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**General Instructions :**

- (i) All questions are compulsory.
- (ii) All parts of questions should be attempted at one place.
- (iii) Show your working clearly. They carry marks.
- (iv) To Be Submitted on 16<sup>th</sup> January 2018.

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**(1 mark questions)**

1. Goods withdrawn by the proprietor for his personal use have been recorded in the books as a deduction from the capital. Which accounting principle has been followed in this case?
2. The accountant feels that since sales book is maintained, there is no need to open a sales account. Is he correct in his view? Why?
3. Can any transaction break the accounting equation? If yes, then give an example.
4. X Ltd. Has purchased 60 computers from HCL and is allowed a discount of Rs.5000. is the discount allowed, trade discount or cash discount?
5. What is an opening entry? Give an example.
6. Bank reconciliation statement is prepared by:
  - (a) Creditors
  - (b) Bank
  - (c) Debtors
  - (d) Account holder.
7. What is meant by scrap value of an asset?
8. Loss of sale of an asset is debited to:
  - (a) Asset A/c
  - (b) Reserves A/c
  - (c) Depreciation A/c
  - (d) Profit & Loss A/c

**(3 mark questions)**

9. An enterprise prepares its accounts under accrual basis. Salaries amounting to Rs.10,000 for the month of March were not paid. The owner did not want to record it in the books of accounts on the grounds that the amount was not paid. The enterprise closes its books of accounts on 31<sup>st</sup> March every year. Is the owner correct in doing so? Give reasons.
10. Following are the transactions of M/S komal for the month of April, 2013. Prepare the sales book for the month of April:

DATE	TRANSACTION
APRIL 3	Sold to M/S Gupta on credit: 30 shirts @ Rs.150 each 20 pants @ Rs.300each <b>Less: Trade Discount @ 10%</b>
APRIL 10	Sold old furniture to M/S geeta on credit for Rs. 8000
APRIL 20	Sold 50 shirts to M/S maya @ Rs.150 each
APRIL 23	Sold to M/S Asha on credit: 100 shirts @ Rs.100 each 10 Overcoats @ Rs.1000each <b>Less: Trade Discount @ 10%</b>

**( 4 mark questions)**

**11.** Prepare a two column cash book( cash & bank) from the following transactions:

DATE	PARTICULARS	AMOUNT (Rs.)
SEPT. 1	Cash in hand	7,500
	Bank overdraft	2,500
2	Paid wages	200
7	Cash sales	7,000
10	Cash deposited in bank	4,000
15	Goods purchased and paid by cheque	2,000
21	Paid rent	500
25	Drew from bank for personal use	400
30	Salary due but not paid	1,000

**(6 mark questions)**

**12.** Formulate an accounting equation from the following transactions:

S.NO	TRANSACTIONS
1	Started business with cash Rs.5,00,000
2	Purchased building by taking a loan from SBI for Rs. 10,00,000
3	Sold gooda costing Rs.40,000 for Rs.50,000 on credit to Ram
4	Took goods of Rs.10,000 from business for personal use
5	Accrued interest Rs.5000
6	Commission received in advance Rs.20,000

**13.** Journalise the following transactions:

- (i) Following balances appeared in the books of Ashok on 1<sup>st</sup> April, 2013  
Cash- Rs.50,000 ; debtors- Rs.50,000; stock- Rs.30,000; machinery- Rs.60,000  
Rajesh (creditor)- Rs.30,000.
- (ii) Purchased goods from Rajesh for Rs. 10,000 at a discount of 10%
- (iii) Paid to Rajesh Rs.38,600 in full settlement of his account.
- (iv) Purchased goods of the list price Rs.15,000 from Rakesh less 10% trade discount and 5% cash discount and paid 40% cash immediately.

**14.** On comparing Ram's cash book with bank statement of his old account for the month of November 2013, the following were found:

- (a) Overdraft as per cash book Rs.45,000.
  - (b) Payment side of cash book has been undercast by Rs.1,500.
  - (c) A cheque of Rs.7,500 drawn on his savings accounthas been shown as drawn on his current account.
  - (d) Cheques amounting Rs. 70,000 and entered in the cash book have not been presented.
  - (e) Cheques amounting to Rs.60,000 sent to bank for collection, which though entered in the cash book have not been credited by the bank.
  - (f) Dividends amounting to Rs.35,000 have been paid directly into the bank.
- Prepare a Bank Reconciliation Statement.

**(8 mark questions)**

15. On 1/1/2005, Z Ltd purchased machinery for Rs.1,20,000 and on 30/6/2006, it acquired additional machinery at a cost of Rs.20,000. On 31/3/2007 one of the original machine (purchased on 1/1/05) which had a cost of Rs.5000 was found to have become obsolete and was sold for Rs.500. it was replaced on that date by a new machine costing Rs.8000. depreciation is provided @ 10% p.a. on diminishing balance method. Accounts are closed on 31<sup>st</sup> December every year. Show Machinery a/c upto 31/12/2007.
16. On 1/1/2006 Sachin sold goods for Rs.30,000 to Nalin and drew upon latter a bill for the same amount , payable after 3 months. The bill was accepted by Nalin. The bill was discounted by Sachin from his bank for Rs.29,250 on 31/01/2006. On maturity the bill was dishonoured. He further agreed to pay Rs.10,500 in cash including Rs.500 for interest and accept a new bill for 2 months for the remaining amount. The new bill was endorsed by Sachin in favour of Sakshi. The new bill was duly met by Nalin. Pass journal entries in the books of Sachin.
17. A trial Balance showed excess credit of Rs.2,728, which were placed in a suspense account. Later on the following errors were located. Pass rectifying entries
1. Rs. 825, the total of purchase return book has been posted to the debit of sales return account.
  2. Goods purchased from Suresh Rs.1,800 recorded in Sales Book asRs.180.
  3. An item of Rs.328 written off as a bad debt from Ajay Sharma has not been debited to Bad Debts Account.
  4. Goods purchased from X Rs.3,500 and from Y Rs.4,000, but were recorded in the purchase book as X Rs.4,000 and YRs.3,500.
  5. Goods returned to Ramesh forRs.2,600 was correctly recorded in the return outward book but was wrongly posted to his account as Rs.260.
  6. A sum of Rs.2,210 stolen by an ex-employee stand debited to Suspense A/c.
  7. A sum of Rs.500 written off as depreciation on Machinery, were not posted

**( 15 mark question)**

18. From the following figures prepare the Trading and Profit and Loss Account for the year ended 31<sup>st</sup> March, 2001 and the Balance Sheet as on that date :-

<b>PARTICULARS</b>	<b>AMOUNT</b>	<b>PARTICULARS</b>	<b>AMOUNT`</b>
Stock (1 <sup>st</sup> April, 2000)	75,000	Sundry Debtors	82,000
Purchases	8,00,000	Loan from X	10,000
Sales	12,00,000	Interest on X Loan	1,500
Motor Car	1,50,000	Furniture	20,000
Car Expenses	42,000	Land and Building	2,00,000
Rent	5,500	Capital	2,50,000
Salaries	35,200	Sundry Creditors	91,300
Bad Debts	1,500	Returns Inward	7,500
Provision for bad debts	8,100	Returns Outward	6,000
Commission (Cr.)	4,600	Cash in hand	16,400
Wages	1,25,000		
Insurance	8,400		

**Adjustments :**

- (i) Commission include Rs.1,600 being commission received in advance.
- (ii) Write off Rs.2,000 as further Bad-debts and maintain Bad-debts provision as 5% on debtors..
- (iii) Loan from X has been taken at 18% p.a. interest.
- (iv) Depreciate furniture by 15% p.a. and Motor Car by 20% p.a.
- (v) Closing Stock was valued at Rs.60,000.

# **BUSINESS STUDIES**

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## **General Instructions :**

- (i) All questions are compulsory.
  - (ii) All parts of questions should be attempted at one place.
  - (iii) Show your working clearly. They carry marks.
  - (iv) To Be Submitted on 16<sup>th</sup> January 2018.
- 

## **TOPIC: INTERNAL TRADE**

### **Very Short Answer Type Questions**

- Q.1. What are the different options of selling goods to customers without owing a retail Show room?
- Q.2. 'Spencers', 'Big Apple' and 'Big Bazaar' are example of which type of fixed shop (Large stores)
- Q.3. What do you mean by Pavement Traders?
- Q.4. Write three names of Itinerants retailers.
- Q.5. Name the Trader who is a channel between wholesaler and consumer.
- Q.6. Name the type of trader which enjoys the profit at both the stages of production and sale.
- Q.7. List any three limitations of 'Super Bazaar'.
- Q.8. Suggest two causes for the removal of wholesaler.
- Q.9. Complete the following sentences:
  - (i) Peddlers and hawkers are \_\_\_\_\_ traders.
  - (ii) Super bazaars are also known as \_\_\_\_\_ stores.
  - (iii) Consumer's cooperative stores are started by \_\_\_\_\_.
  - (iv) Every commodity is sold at a \_\_\_\_\_ price at a one-price shop.
  - (v) A departmental store has a \_\_\_\_\_ under one roof.

### **Short & Long Answers Type Questions**

- Q.10. Define Internal Trade. Give example.
- Q.11. "The wholesaler is an intermediary between the manufacturer and the retailer" Explain.

Q.12. What are multiple shops?

Q.13. Enumerate the merits of Chain stores.

Q.14. Differentiate between single line stores and specialty stores.

Q.15. Give the advantages of a Super Markets.

Q.16. Distinguish between Wholesale trade and Retail trade.

Q.17. Write a short note on

(i) COD

(iii) CIF

(ii) FOB

(iv) E&OE

Q.18. What do you understand by a Departmental store? Do you think they make shopping Convenient? Comment.

Q.19. Discuss the services rendered by the Retailers to the consumers.

Q.20. What are Mail order houses? Give its demerits.

Q.21. Discuss the various types of Small scale retailers who run their fixed shops.

Q.22. Distinguish between departmental stores and multiple stores.

Q.23. Some people wish the elimination of wholesalers while others protest. Comment.

Q.24. Discuss the role of Chamber of Commerce and Industry in promotion of internal trade.

Q.25. Write a note on: Automatic Vending Machine.

Q.26. A large sized company manufacturing shoes for Indian market has to determine whether it should use wholesale set up or its own chain stores for distributing its products. What alternative would you suggest? Give reasons.

Q.27. Discuss the main documents used in Internal Trade.

Q.28. Harris is a supplier of drugs and medicines in Delhi. He gets the requirements through various agents and procures the stock directly from the pharma companies, thereby making profits through the margins the earned. Off lately, he has been thinking of holding back stock of some lifesaving drugs, so as to earn greater margins by later selling them at higher rates.

(i) Is he morally correct in doing so?

(ii) Which social and moral values should he consider before taking such a decision?

# ENTREPRENEURSHIP

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## General Instructions :

- (i) All questions are compulsory.
  - (ii) All parts of questions should be attempted at one place.
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  - (iv) To Be Submitted on 16<sup>th</sup> January 2018.
- 

## PREPARE A PROJECT ON ONLINE SHOPPING .

- a. Choose a product for Online shopping.
- b. As an entrepreneur consider the feasibility study of your product.
- c. Incorporate the various aspects of proposed business plan and its successful execution.
- d. Project should comprise of a powerpoint presentation and a file of 6-7 pages explaining about the business plan.

The business plan should cover all the aspects of planning like Introduction, business venture, organized plan, production plan, human resource plan, marketing plan, financial plan and miscellaneous

## APPLICATION BASED QUESTIONS

**Ques-1.** Take a business of your choice , now list at least ten items each under Start up, variable and fixed cost.

**Ques-2** Prepare a cash register for the following .

- Gagan started tailoring business on June 10 with an opening balance of Rs.90,000/- as cash and Rs.55,000/- in bank account
- On January 15, he purchased raw material for Rs.10,000/- and paid by cheque
- On January 18 he made cash sales of Rs.4000/-
- On January 20 he bought some furniture for Rs.8,000/- and paid by cheque
- On January 22 he pays insurance premium of Rs.2000/- in cash
- On January 23 he deposits Rs.3000/- in his bank account
- On January 24 he pays Rs.17,000/- salary to his employees
- On January 26 he withdraws Rs. 500/- from bank

**Ques-3.** Prepare and Income Statement for the following.

Anita sells makes chocolates from home. She purchases 400 boxes from a wholesale dealer @ Rs.50/- per box and sells @ Rs.80 per box . She spent Rs.250/- on advertisement. Calculate her income preparing an income statement for the same.

**Ques-4.** Seema plans to start a printing press in New Delhi. She seeks guidance from her cousin who is already into this business. What kind of mentoring is this? How does mentoring benefit an organization?

# HISTORY

## General Instructions :

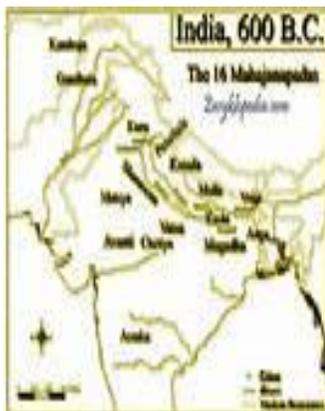
- (i) All questions are compulsory.
- (ii) All parts of questions should be attempted at one place.
- (iii) Show your working clearly. They carry marks.
- (iv) To Be Submitted on 16<sup>th</sup> January 2018.

- Collect the data, research , compile and compare with observations on the following topics :

1. Buddhism , Jainism and Hinduism
2. Stupas and their preservation.
3. Mahajanpadas vs Metropolitan cities
4. Ancient and modern temples in India.

- **Guidelines: -**

- Students can use primary sources available in city archives, newspaper cuttings, photographs, film footage and recorded-- written speeches.
- Secondary sources can also be used after proper authentication.
- Each student to compile the work in a file.



# POLITICAL SCIENCE

## General Instructions :

- (i) All questions are compulsory.
- (ii) All parts of questions should be attempted at one place.
- (iii) Show your working clearly. They carry marks.
- (iv) To Be Submitted on 16<sup>th</sup> January 2018.

I. Make a **project** on 'Today's changing political scenario in the world and India and its impact on international politics' in reference to the Indian foreign policy.

II. In the same file write a **research paper** on the following topics-

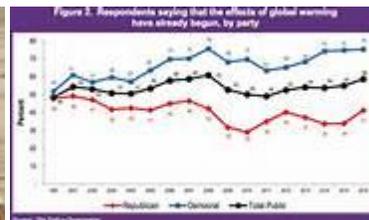
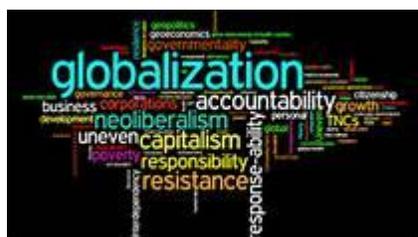
- |                                       |                |
|---------------------------------------|----------------|
| 1. INDIA AND NON ALIGNED MOVEMENT     | ROLL NO 1-8    |
| 2. GLOBALISATION AND BREXIT           | ROLL NO. 9-16  |
| 3. ENVIRONMENTAL ISSUES AND SOLUTIONS | ROLL NO. 17-25 |
| 4. SAARC SUMMITS AND CHANGING AGENDAS | ROLL NO. 26-34 |

III. Write a **report** on any one of the following topics :-

1. Syrian war and Refugee Crisis
2. Rise of the Internet Has Reduced Voter Turnout
3. Political Inequality Leads to Digital Inequality
4. Data Shows Increasing Political Polarization on Climate Change
5. The Refugee Crisis in Europe: Challenges and Possible Solutions

## GUIDELINES

1. Introduction, aim, Preface, acknowledgement, Index.
3. Main Project- Research, writing, illustrations, pictures , cartoons & facts ,figures and Newspaper cuttings., observations, interviews.
4. End - Bibliography and learning outcome



# HOME SCIENCE

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## **General Instructions :**

- (i) All questions are compulsory.
  - (ii) All parts of questions should be attempted at one place.
  - (iii) Show your working clearly. They carry marks.
  - (iv) To Be Submitted on 16<sup>th</sup> January 2018.
- 

## **PROJECT WORK**

1. Identify the problems of adjustments of adolescents with the help of a tool and make a report
2. Spend a day with an aged person ( at home / old age home) and observe their needs and problems , write a report
3. List and discuss 4/5 areas of agreement and disagreement of self with:
  - a. Mother b. father c. siblings d. friends e. teachers

## **Questions**

- Q1. Mention two important points with adequate reasons while selecting a saree design for your sister who is short in height.
- Q2. What is the effect of vertical lines in an apparel on the body shape of a person?
- Q3. What do you understand by rhythm in design of a dress?
- Q4. State two ways by which you can achieve balance in the design of a dress.
- Q5. State one effect each of horizontal lines in design and square neckline in clothes on the figure of a person.
- Q6. Using each of the four elements of art, suggest a suitable design of a skirt and blouse for a fat girl.
- Q8. List six points you will keep in mind while selecting summer clothes for your tall and thin sister.
- Q9. Sudha has been asked to design a salwar suit for a woman who has heavy hips. Give her two suggestions which when implemented can shift emphasis away from this area. Also state two ways create harmony in the dress.
- Q10. While purchasing clothes for a dress why do you keep in mind the occasion for which it is to be worn?

## **FINE ARTS**

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### **General Instructions :**

- (i) **All questions are compulsory.**
  - (ii) **All parts of questions should be attempted at one place.**
  - (iii) **Show your working clearly. They carry marks.**
  - (iv) **To Be Submitted on 16<sup>th</sup> January 2018.**
- 

A **landscape** is the visible features of an area of land, its landforms and how they integrate with natural or man-made features.

\*Students need to prepare five sheets(A2) based on landscape which includes the physical elements of geophysically defined landforms such as mountains, hills, water bodies such as rivers, lakes, ponds and the sea, living elements of land cover including indigenous vegetation, human elements including different forms of land use, buildings and structures, and transitory elements such as lighting and weather conditions.

Medium-water colour or poster colour

## LEGAL STUDIES

### General Instructions:

- Neat and tidy work will be appreciated.
  - Complete the questions in your register.
  - To Be Submitted on 16<sup>th</sup> January 2018.
  - Happy Holidays!
1. Detailed Report on Basic Features of Indian Constitution. Student are advised to study chapter IV of Unit-I and prepare a detailed report on the Basic features of Our Indian Constitution.
  2. Explain the process by which judges are appointed and removed from their posts.
  3. Who is an under-trial? What are the rights provided to such a person in our country under various laws?
  4. Prepare a report on the various types of marriages. What are the various grounds of a valid marriage amongst various religions?
  5. What are the various grounds for divorce available to the people belonging to different religions?

**WISH YOU A VERY**

**HAPPY NEW YEAR**

**AND**

**HAPPY HOLIDAYS!**