

**DAV PUBLIC SCHOOL, SECTOR-49, GURUGRAM**  
**HOLIDAY HOMEWORK**  
**CLASS: XI**

**SUBJECT: ENGLISH**

1. Prepare a flow chart depicting all the incidents of the ordeal faced by Captain Gordan Cook and his family during their sea voyage in the chapter- 'We're not Afraid to Die. If we can all be together'. Present the flowchart in your English register along with one or two attractive pictures.

**2. READING COMPREHENSION**

Read the following passage and answer the questions that follow:

1. The play of names has almost a touch of fable here-Nirakar, the formless one, regenerating the primal form of a forest that had passed into the mist. For the last 20 years Nirakar Mallick, a small farmer in Orissa's Kendra Para district, has been greening a coastal landscape that had of late been experiencing more of brown. Droughts, as they are meant to be, are cruel in these parts. At other times, it's excess water that's the bane. Nirakar's latest sally-the rebirthing of a forest on a two hectare stretch circling the river Brahmani near his village- came after the green patch was denuded in the 1999 super cyclone.

2. The tidal waves that had swamped Orissa's coasts had led to heavy soil erosion, rendering these villages for ever vulnerable to floods. But now thanks to Nirakar, over five thousand trees of sundry varieties cover the area. This has not only helped restore the local ecosystem but also provided a potential source of income to the community. People, however, were skeptical in the beginning. They were losing out on grazing ground for cattle. Some were also suspicious of Nirakar's motive, fearing he was out to grab government land. But once the trees began shooting up and the entire village looked rejuvenated, everybody was won over. Nirakar, for one, never made any bid to corner the fruits of his labour.

3. So now there are fruit bearing trees in the forest-jackfruit, mango, guava, coconut-as well as timber rich ones like teak, casuarinas, eucalyptus. Not all of the seven thousand seedlings he'd planted, survived the elements. That didn't deter him, and Nirakar proudly says that as long as he is alive, no one from the area would ever harm a tree.

4. Over the years, Nirakar has spent a small fortune out of his own hard earned savings in greening mission. As a driver in Orissa Lift Irrigation Corporation (OLIC), he'd get about Rs

3000 a month. From this, he would put aside Rs 500 for planting trees. For the last two years he has not been receiving his salary from the defunct OLIC. He manages to make both ends meet by working his share of the one acre farmland inherited from his father. Born in 1962 in a poor Harijan family in Aliha village, Nirakar inherited a feel for the soil and the green thumb of his father. A good student, he had to quit the studies after class 9th to take up a job. He joined the OLIC in 1982 and got married the same year. Today he is father of trees, two sons and a daughter.

5. Though officially a driver, Nirakar is a jack of all trades, doubling up as mechanic, fitter, electrician and operator at Aliha's lift irrigation project. For the area's small farmers who depend on the water supplied through lift irrigation, he is nothing short of a hero.

6. Anti hero too, for some, at a point of time. Traditionally, the Harijans of Aliha never planted coconuts. The Brahmins had told them that if they dared to plant the forbidden fruit, there would be death in the community. Nirakar broke this "divine" taboo. He got about agricultural farm and distributed it among his people. Today almost every courtyard in Aliha village has half a dozen fruit bearing coconut trees and no one died. Nirakar's wife is an enthusiastic partner in his green ventures. His children also help him. He has now taken a plantation of 20,000 seedlings along the three kilometers stretch from Manipatna to Singri in his block. Nirakar aims to plant at least one lakh trees before he dies.

7. Recognition has evaded him so far and Nirakar is least bothered. His only regret is that the government has not taken over maintenance of the forest from him so that it can be preserved for posterity. He hopes his good work is not lost after he is gone. He is, as you must have realized by now, crazy about his trees. "The trees speak to me," he says, "God has paid me back richly in many ways. I need nothing more".

2.1 Choose the most appropriate option:

a) For the last 20 years Nirakar Mallick has been

- i) planting trees
- ii) painting green coastal landscapes
- iii) living in Orissa's Kendra para district
- iv) both i and ii

b) Nirakar has broken the 'divine taboo' by

- i) planting 7000 seedlings
- ii) distributing agricultural land among Harijans

- iii) successfully leading the green campaign
- iv) planting coconut trees

**2.2 Answer the following questions briefly-**

- a) Give an appropriate title to the passage. \_\_\_\_\_
- b) Why did Nirakar quit his studies in childhood?

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- c) What is the Para district of Orissa prone to?

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- d) What happened to the seven thousand seedlings planted by Nirakar?

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- e) How has Nirakar been running his household for the last two years?

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- f) Why was Nirakar considered as “a Jack of all trades?”

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**2.3. Find the words from the passage which mean the same as:**

- a) weak (para 2) \_\_\_\_\_
- b) discourage/prevent (para 3) \_\_\_\_\_

**3. READING COMPREHENSION**

Read the following passage carefully and answer the questions that follow:

(1) Spirituality seldom dribbled with soccer, until the ‘Hand of God’ came into play during the quarter final match of the 1986 World Cup football between Argentina and England. Diego Maradona claimed that divine intervention had helped him score the controversial goal.

(2) A short film made in 2003 by Mike Walker – Does God play football? – explored the relationship between God and Tommy, a seven year old football fan. Tommy’s only desire is to have a father of his own to play football with. In the absence of a real Dad, he adopts God as his father with the help of a local priest – very like how the human soul longs for communion with the Universal spirit.

(3) An individual remains unfit for spiritual journey without the requisite physical and mental strength. Vivekananda said: “You will be nearer to Heaven through football than through the study of Bhagavad Gita”. A player's patience and perseverance is tested on the football field at every moment; the ability to wriggle out of tough situations and hold on to one's nerves in tight situations. A seeker, too, has to undergo such trials during the inward game of realization.

(4) Look at football as a metaphor for life. The ball is the individual's ego. Team members are family and friends; trust in teammates is the foundation of a good relationship and helps the player win the match of happiness. The opposition players are obstacles like anger, pride, hatred, that must be overcome to reach the goalpost. The goalpost is the universal consciousness to which a person must ultimately submit the ego, to achieve true bliss. The coach is the guru who teaches the way and the player learns from his mistakes on the field. The referee is the law of karma that reinforces the correct rules for playing. The audience is society that reacts to performance on the field. As in life, a game that has started must end. As long as a person is in the game, one gets the illusion of limited time and space. Only when the game gets over, does one realize the limitlessness of time and space.

(5) Every player is assigned a particular role on the field according to his skills – forward, midfielder, defender, or goalkeeper. Similarly, in life we have designated roles. Our capabilities and choices determine the contribution we make to the world through our work. Like a player who can manoeuvre the ball on the field, a person has the free will to choose his thoughts, words and actions. Football is meditation ‘on the run’. A player is always ‘in the moment’ for the entire duration of the play. The player has no thought of past and no use for future, as all the scoring opportunities are created in the ‘now’.

(6) Football teaches one to be a good spectator, one who watches the game with passionate detachment. For him, an exciting football match is only that – a game. Wins or losses, even for his favourite team, do not bother him. A good spectator is like a joyful observer of life; he witnesses events around him as they come and go, and remains detached as he is always centered in truth.

(7) Today, football is a faith binding a legion of followers across the world. People, irrespective of their religions, nationalities and cultures, are tuning in simultaneously to watch live football. If this is not universal brotherhood, what else is?

(A) On the basis of your reading of the passage, answer the following questions in your own words as far as possible. Use one or two sentences only for each answer:

i. What claim was made by Diego Maradona when he played for 1986 quarter-final match of the World Cup?

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ii. What is the theme of the short movie 'Does God play football'?

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iii. How can we get near to the Almighty by playing football? What are Vivekanand's views regarding this?

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iv. How does football symbolize life?

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v. How is football meditation 'on the run'?

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vi. What are the similarities between playing the football game and playing the designated role in life?

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(B) Find words in the passage which mean the same as the following:

i. a figment of imagination (Para 4) \_\_\_\_\_

ii. a planned and controlled movement or series of moves (Para 5) \_\_\_\_\_

#### 4. INTEGRATED GRAMMAR

**1. The following passage has not been edited. There is an error in each line against which there is a blank. Underline each error and write your correction in the space provided.**

I entered the manager's office and sat down.

I have just lost five hundred rupees and I felt very upset. a) \_\_\_\_\_

"I leave the money in my desk," I said, b) \_\_\_\_\_

"and it is not there now". The manager was very sympathetic  
but he can do nothing. "Everyone loses money these days", c) \_\_\_\_\_

he said, He start to complain about this wicked world, d) \_\_\_\_\_  
but is interrupted by a knock at the door. e) \_\_\_\_\_  
A girl came in and puts an envelope on his desk. f) \_\_\_\_\_  
It contains five hundred rupees. "I found this g) \_\_\_\_\_  
outside this gentleman's room," she said.  
"Well! I say to the manager, "there is still some h) \_\_\_\_\_  
honesty in this world !"

**2. Supply the appropriate words to complete the following passages:**

a. A school is a place where many students (a)..... cultures and attitude converge. The first thing they learned in primary school (b) ..... that there are so many different kinds of people. They 6 experience the pains and pleasures of getting to know (c) ..... schoolmates. They discover their own strengths (d) ..... weaknesses. They learn (e)..... meaning of tolerance, teamwork, friendship, selflessness, etc. Some experiences are uplifting (f) .....some are depressing.

b. So the wizard said, "Oh, very well. (a) ..... to the end of the lane and turn (b) ..... three times and look down the magic well and there you will (c) ..... three pennies. Hurry (d) ..... " So Roger Skunk went up to the end of the lane and (e) .....around three times and there is the magic well (f) .....three pennies!

**3. There is an error in each line of the passage given below. Underline each error and write the correction in the space provided.**

Couples who marries to settle a) \_\_\_\_\_  
down is likely to be headed b) \_\_\_\_\_  
for difficulties, said Dr. Paul, Director of  
the Institute of Family relations, Los Angeles  
Most marriage difficulty are caused c) \_\_\_\_\_  
by improper balance in normal human needs. d) \_\_\_\_\_  
These are the needs of social acceptance, e) \_\_\_\_\_  
a full emotion life, and f) \_\_\_\_\_  
some outlet of individual g) \_\_\_\_\_  
creative impulse. h) \_\_\_\_\_

**4. Edit the passage underlining the mistake present in every line by writing the correct word in the blank space.**

My day begins on five O'clock in the morning a) \_\_\_\_\_  
 It has been so since the last forty years b) \_\_\_\_\_  
 except for the two years of which I was c) \_\_\_\_\_  
 very ill. I wake up at the sound of an d) \_\_\_\_\_  
 alarm clock bought at 1952. e) \_\_\_\_\_  
 From then until today, it has never f) \_\_\_\_\_  
 let me down. My routine, however turns topsy-turvy  
 in holidays when I cannot sleep for ten O'clock. I have g) \_\_\_\_\_  
 maintained a fairly regular routine over my working years. h) \_\_\_\_\_  
 When I retire on two years' time, I hope I will be i) \_\_\_\_\_  
 able to continue this practice.

## CHEMISTRY

### **SOME BASIC CONCEPTS OF CHEMISTRY**

1. Which of the following is dependent of temperature ? (a) Molarity (b) Molality (c) Mole fraction (d) Mass percentage
2. 2. 4 g of NaOH dissolved in 100 ml solution. Molarity of the solution is (a) 1 M (b) 10 M (c) 0.1 M (d) 4 M
3. 3. Which has the maximum number of molecules among the following ? (a) 44g of CO<sub>2</sub> (b) 44g of O<sub>2</sub> (c) 8g of H<sub>2</sub> (d) 64g of SO<sub>2</sub>
4. 4. 10 mol of Zn react with 10 mol of HCl. Calculate the number of moles of H<sub>2</sub> produced. (a) 5 mol (b) 10 mol (c) 20 mol (d) 2.5 mol
5. 5. The number of oxygen atoms in 4.4g of CO<sub>2</sub> is approximately (a)  $1.2 \times 10^{23}$  (b)  $6 \times 10^{22}$  (c)  $6 \times 10^{23}$  (d)  $12 \times 10^{23}$
6. 17 g of NH<sub>3</sub> gas will occupy a volume of \_\_\_\_\_ cm at NTP.
7. The number of Li atoms in \_\_\_\_\_ g. is  $6.022 \times 10^{24}$  atoms.
8. (1/12)th of the mass of carbon atom is \_\_\_\_\_
9. Number of atoms of oxygen in 24 g of O<sub>3</sub> is \_\_\_\_\_
10. The number of moles of barium carbonate which contains 1.5 moles of oxygen atoms is \_\_\_\_\_
11. A mixture having 2 g of H<sub>2</sub> and 32 g of oxygen occupies a volume of \_\_\_\_\_ at NTP.

12. If the phosphate of a metal has the formula  $MPO_4$  the formula of the metallic sulphate is \_\_\_\_\_
13. At NTP, the mass of 1 litre of gas is 3 g. Molecular mass of the gas is \_\_\_\_\_
14. The percentage mass of magnesium in chlorophyll is 2.68% The number of magnesium atoms in 2 g of chlorophyll is \_\_\_\_\_
15. The mass of one molecule of carbon dioxide is \_\_\_\_\_ 11 Percentage of nitrogen in urea is \_\_\_\_\_
16. Match the following

| Column X         | Column Y                          |
|------------------|-----------------------------------|
| a. 40 g of He    | i. $6.022 \times 10^{23}$ atoms   |
| b. 35 g of Li    | ii. 10 atoms                      |
| c. 40 u of He    | iii. $6.022 \times 10^{24}$ atoms |
| d. 16 g of $O_2$ | iv. $3.011 \times 10^{24}$ atoms  |

**Directions for Q. No.17 and 18**

A If both Assertion & Reason are true and the reason is the correct explanation of the assertion.

B If both Assertion & Reason are true but the reason is not the correct explanation of the assertion.

C If Assertion is true statement but Reason is false.

D If both Assertion and Reason are false statements

17. Assertion : No of moles of  $H_2$  in 0.224 L of hydrogen is 0.01 mole.

Reason : 22.4 L of  $H_2$  at STP contain  $6.023 \times 10^{23}$  moles.

18. Assertion : Atomic mass of Na is 23.

Reason : An atom of sodium is 23 times heavier than  $1/12$ th mass of C-12 isotope.

**STRUCTURE OF ATOM**

- Bohr's model can explain
  - the spectrum of hydrogen atom only
  - spectrum of atom or ion containing one electron only



- c. the spectrum of hydrogen molecule  
d. the solar spectrum
2. The wavelength of the electron emitted, when in a hydrogen atom, electron falls from infinity to  $n = 1$  stationary state, would be [Rydberg's constant =  $1.097 \times 10^7 \text{ m}^{-1}$ ]  
a. 91 nm b. 192 nm c. 406 nm d.  $9.1 \times 10^{-1} \text{ nm}$
3. The shortest wavelength in hydrogen spectrum of Lyman series, when  $R_H = 109678 \text{ cm}^{-1}$  is  
a.  $1002.7 \text{ \AA}$  b.  $1215.67 \text{ \AA}$  c.  $1127.30 \text{ \AA}$  d.  $911.7 \text{ \AA}$
4. The wave number of the spectral line in the emission spectrum of hydrogen will be equal to  $8/9$  times the Rydberg's constant if the electron jumps from  
a.  $n = 3$  to  $n = 1$  b.  $n = 10$  to  $n = 1$  c.  $n = 9$  to  $n = 1$  d.  $n = 2$  to  $n = 1$
5. Those species are called isotones which have same  
a. atomic number  
b. mass number  
c. number of electrons  
d. number of neutrons
6. Calculate the wavelength of the light required to break the bond between two chlorine atoms in a  $\text{Cl}_2$  molecule. The  $\text{Cl} - \text{Cl}$  bond energy is  $243 \text{ kJ mol}^{-1}$   
a.  $8.18 \times 10^{-31} \text{ m}$  b.  $6.26 \times 10^{-7} \text{ m}$  c.  $4.91 \times 10^{-6} \text{ m}$  d.  $4.11 \times 10^{-7} \text{ m}$
7. A 600 W mercury lamp emits monochromatic radiation of wavelength  $3.315 \times 10^{-7} \text{ m}$ . How many photons are emitted from the lamp per second?  
a.  $1 \times 10^9$  b.  $1 \times 10^{21}$  c.  $1 \times 10^{23}$  d.  $1 \times 10^{20}$
9. Those species are called isotones which have same  
a. atomic number  
b. mass number  
c. number of electrons  
d. number of neutrons
10. According to \_\_\_\_\_ It is impossible to measure simultaneously the position and momentum of a microscopic particle with absolute accuracy. If one of them is measured with great accuracy, the other becomes less accurate.

11. According to Bohr's model of an atom, the energy of different orbits in an atom is given by the expression\_\_\_\_\_.
12. A spectrum having distinct lines was observed for hydrogen. Rydberg gave a general relation between wave number and series of integers. The expression is \_\_\_\_\_.
13. The spectral series which lies in visible region is\_\_\_\_\_ series.
14. The negative sign in the energy expression appears because the energy of a free electron at rest is taken as \_\_\_\_\_.
15. The French physicist Louis de Broglie postulated the dual nature of moving particles and showed that wavelength of the matter wave is related to the momentum by the equation\_\_\_\_\_.

### **BIOLOGY**

- Prepare a diagrammatic representation of Alternation of Generation shown by plants.
- Prepare a flow chart of phylum chordata up to class with two examples of each.
- Prepare a concept map of Five Kingdom Classification system
- Prepare a concept map showing Aestivation in Floral whorls.
- Make a tabulated comparative study between Xylem and Phloem.

### **PHYSICS**

## Dimensional and Error Analysis

Q.1. Using Dimensional methods to check the correctness of following physical equations-

- (i)  $S_n = u + a/2 (2n-1)$       (ii)  $\lambda = h / mv^2$   
 (iii)  $v = 2\pi\sqrt{T/m}$ , where  $\lambda$  = wavelength,  $h$  = planks constant,  $T$  = Tension &  $m$  = mass per unit length.

Q.2. Write the no. of significant figures in the following numbers;

- (i) 1000cm      (ii) 1000 Nm<sup>2</sup>      (iii)  $1 \times 10^8$ cm  
 (iv)  $1.0 \times 10^8$ cm      (v) 1.005 gm/cm<sup>3</sup>      (vi) 1.00500 m<sup>2</sup>  
 (vii) 0.0005 nm      (viii) 0.00050 g      (ix) 0.17  
 (x) 35.00 m      (xi) 0.006320 Kg      (xii) 6.0325 Å

Q.3. Convert 100 dynes force into its MKS unit.

Q.4. Write the dimensional formula of following physical quantities:

- (i) coefficient of friction      (ii) strain  
 (iii) Relative density      (iv) Avogadro number.

Q.5. If the percentage error in the measurement of 'V' and 'I' are 2% & 3%. Find the % error in the measurement of resistance in an experiment (ohm's law).

Q.6. Escape velocity of a mass on the surface of earth depends upon gravitational constant (G), mass of earth (M) & radius of earth (R). Derive a relation connecting these physical quantities.  
 $[v = k G^{1/2} M^{1/2} / R^{1/2}]$

Q.7. In an experiment a physical quantity 'Y' is measured as  $Y = ab^4/c^3$ , where  $a = 2 \pm 0.02$  unit,  $b = 3 \pm 0.03$  unit &  $c = 5 \pm 0.05$  unit. Calculate the maximum permissible percentage error in the measurement of Y. [8%]

Q.8. Check the correctness of the following equations:

- (i)  $v^2 = 8u^2 + 22as$       (ii)  $T = 8\pi^2\sqrt{l/g}$   
 (iii)  $(P + a/V^2)(V-b) = nRT$       (iv)  $v_1 = \{(m_1 - m_2)u_1 + 2m_2u_2\}/(m_1 + m_2)$   
 where symbols have their usual meanings.

Q.9. Check the correctness of the formula  $v = \frac{1}{\lambda} \sqrt{\frac{K}{d}}$  by the method of dimensions, where  $v$  is the velocity of longitudinal waves,  $\lambda$  is the wavelength of wave,  $K$  is coefficient of volume elasticity (Bulk Modulus) and  $d$  is the density of the medium.

Q.10. The rate of flow (V) of a liquid through a pipe of radius (r) under a pressure gradient (p/l) is given by  $V = \frac{\pi Pr^4}{8l\eta}$ , where  $\eta$  is coefficient of viscosity of the liquids. Check whether the formula is correct or not. [correct]

Q.11. Find the mean absolute error in the measurement of a quantity 'A' whose reading are 8.24 cm, 8.34 cm, 8.44, 8.21 & 8.04 cm. [0.11]

Q.12. Using dimensional analysis, check the accuracy of the following relations

$$(i) \quad S_{nth} = u + \frac{a}{2}(2n-1) \quad (ii) \quad \lambda = \frac{h}{mv}$$

$$(iii) \quad E = mc^2$$

where the symbols have their usual meanings.

Q.13. Find the dimensional formula of length assuming force, energy & velocity to be fundamental quantities.  $[F^{-1} E^1 v^0]$

Q.14. The escape velocity from the surface of earth is given by  $v = \sqrt{\frac{2GM}{R}}$ , where the M is mass and R is radius of earth. Check the correctness of the formula.

Q.15. Using dimensional method, prove that:

$$(i) \quad F = 6\pi\eta rv_t \quad (ii) \quad V = \pi pr^4 / 8\eta l$$

$$(iii) \quad h = 2S \cos\theta / r dg, \text{ where symbols have their usual meanings.}$$

Q.16. Nuclear force b/w two nucleons is given as:  $F = ce^{-\lambda r} / r^2$ . Find the dimensions of constants c &  $\lambda$ .

Q.17. Assuming that aerodynamic drag (D) depends on effective area (A) of the body, the speed (v) of the body relative to air and density of air ( $\sigma$ ). Derive a relation connecting these physical quantities.  $[F = k A v^2]$

Q.18. Calculate the focal length of a spherical mirror from the following data:

$$u = (50.1 \pm 0.5) \text{ cm}, v = (20.1 \pm 0.2) \text{ cm}.$$

Q.19. The critical velocity (v) of flow of a liquid through the pipe of radius (r) is given by  $v = \frac{\eta}{\rho r}$ . Where  $\rho$  is density of liquid,  $\eta$  is coefficient of viscosity of the liquid. Check whether the relation is correct dimensionally.

Q.20. Find the dimensions of 'b' & Y in the following equation if that of 'a',  $\alpha$  &  $\beta$  and  $\lambda$  are [L],  $[T^{-1}]$ ,  $[LT^{-1}]$  [L].  $Y = a^2 \cos^2 \{2\pi \cdot \beta \lambda / b\alpha\}$

Q.21. Check the correctness of the relation  $h = \frac{2\sigma \cos\theta}{r^2 dg}$ , where h is height,  $\sigma$  is surface tension,  $\theta$  is angle of contact, r is radius, d is density and g is acceleration due to gravity. [wrong]

Q.22. A bee of mass 0.000096 kg sits on a flower of mass 0.0123 kg. Find the total mass in appropriate significant fig. [0.0124 kg]

Q.23. Each side of a cube is measured to be 1.025 m. Find the total surface area and volume of the cube with due regard to significant figures. [6.304, 1.077]

Q.24. Round off the following to three significant figures.

(i) 1.0084

(ii) 0.005135

(iii) 39.99

(iv)  $3.1570 \times 10^8$

Q.25. The number of seconds in one day is 86400. With due regard to significant figures.

Write it in terms of power of 10.

$[8.6400 \times 10^4]$

Q.26. A LASER beam aimed at the moon takes 2.56s to return after reflection at moon's surface. Find the radius of the lunar orbit round the earth.  $[3.84 \times 10^8 \text{ m}]$

Q.27. The velocity of water waves may depend on their wavelength  $\lambda$ , the density of water  $\rho$  and the acceleration due to gravity  $g$ . Find, with the method of dimensional analysis, the relation between these quantities.

Q.28. Derive using method of dimensions, an expression, for the energy of a body executing SHM, assuming that this energy depends upon.

(i) The mass 'm'

(ii) The frequency  $n$ , and

(iii) Amplitude of vibration of the body.

$[E = kmn^2r^2]$

Q.29. Find the value of 100 dyne on a system based upon the metre, the kilogram and the minute as the fundamental units.

Q.30. The surface tension of water is 72 dynes  $\text{cm}^{-1}$  in cgs system. Find the value in SI units.

Q.31. Given that the period  $T$  of the oscillation of a gas bubble from an explosion under water depends upon  $p$ ,  $d$  and  $E$ , where  $p$  is the static pressure,  $d$  the density of water and  $E$  is the total energy of explosion. Find dimensionally an expression for  $T$ .

Q.32. Show that angular momentum has same dimensions as those of plank's constant. Plank's constant is given by the relation  $E = h\nu$  where letters have their usual meanings.

## Mathematical Tools

Q.1. Differentiate the following functions w.r.t.  $x$

(i)  $y = x^{7/2}$

(ii)  $y = x^{-3}$

(iii)  $y = x \sin x$

Integrate the following

(i)  $\int x^{15} dx$

(ii)  $\int x^{1/2} dx$

(iii)  $\int (3x^{-7} + x^{-2}) dx$

(iv)  $\int x^2 dx$

(v)  $\int (GMm / x^2) dx$  where  $G$ ,  $M$ ,  $m$  are constants

(vi)  $\int Mv dv$

(vii)  $\int (Kq_1q_2 / r^2) dr$  where  $K$ ,  $q_1$ ,  $q_2$  are constants.

(viii)  $\int \frac{dx}{\sqrt{1-x^2}}$

(ix)  $\int \frac{dx}{1+x^2}$

## ECONOMICS

EACH STUDENT NEEDS TO MAKE ONE PROJECT AS PER GUIDELINES BY CBSE

SUGGESTED TOPICS ARE-

- a) **SUBSTANTIAL CHANGES IN DEMAND PATTERN DUE TO CORONAVIRUS OUTBREAK**
- b) **ENVIRONMENTAL IMPACT TOOK PLACE DURING LOCKDOWN**
- c) **POLICIES IMPLEMENTED BY GOVERNMENT TO COME OUT OF THE RECESSION WORLD IS FACING**
- d) **BADLY HIT SECTOR DURING THIS GLOBAL PANDEMIC.**

EACH STUDENT HAS TO PICK ANY ONE TOPIC FROM THE ABOVE MENTIONED TOPICS AND NEEDS TO DESIGN A QUESTIONNAIRE (AT LEAST 12 QUESTIONS EXCLUDING PERSONAL DETAILS) ON THE BASIS OF THE OBJECTIVE OF THE STUDY AND GET IT FILLED BY ATLEAST 20 INFORMANTS ( CAN BE THROUGH GOOGLE FORMS OR THROUGH HARD COPY)

FURTHER DO THE STATISTICAL ANALYSIS OF THE ABOVE.

THE SUGGESTED FLOW CHART OF THE PROJECT WORK IS AS FOLLOWS-  
COVER PAGE INCLUDING THE NAME OF PROJECT

PAGE 1 SHOULD HAVE STUDENT DETAILS ; SCHOOL NAME , STUDENT'S NAME CLASS AND SECTION , ROLL NO (IF YOU KNOW)

CERTIFICATE

ACKNOWLEDGEMENT

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INTRODUCTION

SAMPLE QUESTIONNAIRE

RESULTS OF QUESTIONNAIRE

## HOME-SCIENCE

1. Plan two nutritious recipes for adolescents. Recipes should be rich in (protein,calcium,iron,folic acid and vitamin c).Recipe should include healthy snacks and beverage. Try your hands on any one recipe at home, make a video of it and send on [harpreetsidak@gmail.com](mailto:harpreetsidak@gmail.com).
2. Collect wrappers of different food products bearing standard marks such as FSSAI, Agmark, ISI etc. Draw these standard marks on A4 size sheets with license no and batch no.
3. Frame five messages related to nutrition and health and exhibit them using different modes of communication such as leaflets, pamphlets etc.
4. Do the following practicals (to be done on loose practical ruled sheets)
  - \* Formats will be shared on Microsoft-team
  - I) Record one day's activities relating to the time use and work.
  - II) Prepare a time plan for yourself.
  - III) Record own diet for a day and qualitatively evaluate it for adequacy.

## MATHEMATICS

1. Complete all your assignments given to you and upload on teams .
2. Revise the concept of SETS and RELATIONS AND FUNCTIONS (specifically the domain range questions).
3. Practice graphs of some important standard functions taught in the class.
4. Write the following activities in your activity file :
  - Activity 1, 3, 6, 9, 10, 15, 18, 19, 20
  - Using the link <http://www.ncert.nic.in/exemplar/labmanuals.html>

## HISTORY

History is one of the most important disciplines in school education. It is the study of the past, which helps us to understand our present and shape our future. It promotes the acquisition and understanding of historical knowledge in breadth and in depth across cultures.

CBSE has decided to introduce project work in history for classes XI and XII in 2013-14 as a part of regular studies in classroom, **as project work** gives students an opportunity to develop higher cognitive skills. It takes students to a life beyond text books and provides them a platform to refer materials, gather information, analyse it further to obtain relevant information and decide what matter to keep and hence understand how history is constructed.

**Students to submit original work. Project report may be a hand written or in printed form. (Eco-friendly materials can be used by students). Students can use primary sources available in city archives, Primary sources can also include newspaper cuttings, photographs, film footage and recorded written/speeches. Secondary sources may also be used after proper authentication.**

**Following topics can be referred by the students:**

1. The Roman Empire with special reference to Architecture, government and society.
2. European voyages and explorations.
3. Renaissance in Europe and developments in terms of science, literature, art and the birth of humanism philosophy and protestant reformation
4. The Legacy of Mesopotamia civilization with special reference town planning, Script and Writing system, Mathematics, Astronomy, Science and their calendar.
5. The great American civilizations- Incas, Aztecs and Mayan civilizations.
6. Evolutionary aspect of human beings.
7. Case study on China and Japan. (Path to modernization)
8. The Islamic Land with special focus on religion, politics and their contribution to the world.
9. Role of Genghis Khan in establishing nomadic empire.
10. Europe from 13th to 16th century.

**Subject: - Business studies Class:-XI (2020-21)**

**1. MIND MAPS: - Make beautiful mind maps of different topics of the chapters (Do in your notebook) . (ANY 5)**

**2. PROJECT WORK**



The project work aim to empower students to relate all the concepts with what is happening around the world and their surroundings ; making them appear more clear and contextual.

By means of project work the students are exposed to life beyond textbooks giving them opportunities to refer materials, gather information, analyze it further to obtain relevant information and decide what matter to keep.

Submit a project report on any one of the following:-

- ☐ 5 Reputed companies (inclusive of both private and public companies ).
- ☐ Success stories of any 5 Indian Entrepreneurs.
- ☐ To study the profile of any 5 business organisations (existing ) ( Sole proprietorship, Joint Hindu Family Business, Cooperative Society, Company and Partnership ). It includes a detailed study of some of the following aspects :-
  - ✓ Nature of business
  - ✓ Size of business (measured in terms of capital employed)
  - ✓ Problems faced
  - ✓ Incentives
  - ✓ Reason behind choice of a particular form
  - ✓ Decision making pattern
  - ✓ Willingness to expand
  - ✓ Usefulness of a form etc.

#### ❖ **PRESENTATION AND SUBMISSION OF THE PROJECT REPORT :-**

Following essentials are required to be fulfilled for the preparation and submission of the project report.

1. The Project will be in a file format.
2. The Project will be handwritten.

3. The Project will be presented in form of scanned file.
4. The Project report will be developed in the following sequence:-

- ☐ Cover page:- project title, student information, school and year
- ☐ List of contents.
- ☐ Acknowledgement and preface.
- ☐ Introduction.
- ☐ Topic with suitable heading.
- ☐ Planning and activities done during the project, if any.
- ☐ Observation and findings while conducting the project.
- ☐ Pictures and images.
- ☐ Conclusions.
- ☐ Teachers Report.

Make your project beautiful with your creative ideas.

**Note:-**

- ☐ **Last date to submit:- 15 June**
- ☐ **The project carries 20 marks in first term examinations.**

**SUBJECT: - ACCOUNTANCY**

1. Give any three points of distinction between cash and accrual basis of accounting.
2. Which basis of accounting is best for business entities and why?

3. Fill in the blanks :

i. \_\_\_\_\_ basis of accounting is not recognized by Companies Act.

ii. Distinction between capital and revenue item is not made under \_\_\_\_\_

\_\_\_\_\_ basis of accounting.

iii. Outstanding expenses are considered under \_\_\_\_\_ basis of

iv. Cash system of accounting does not record \_\_\_\_\_ t

- v. No distinction between cash and credit transaction is maintained under \_\_\_\_\_ basis of accounting.
- vi. \_\_\_\_\_ basis of accounting suffers from personal judgment.
- vii. \_\_\_\_\_ basis of accounting is most suitable to profit making concerns.
- viii. True and fair profit for the accounting period cannot be ascertained under \_\_\_\_\_ Basis of accounting.
- ix. \_\_\_\_\_ basis of accounting is based on GAAP.
- Vouchers are supported by \_\_\_\_\_

4. Select the best alternative in the following cases :-

- i. Vouchers are prepared on the basis of discussion / evidence.
- ii. Transactions are recorded first of all in the journal / ledger.
- iii. Under accrual basis of accounting, expenses are recorded when they are incurred / paid.
- iv. Cash basis of accounting is based / not based on principle of matching concept.
- v. Accrual basis of accounting suffer / does not suffer from personal bias.
- vi. Cash basis of accounting reveals / does not reveal true and fair view of profit or loss.
- vii. Trial Balance is prepared after recording of transactions / posting the transactions in the ledger.
- viii. Cash / Accrual basis of accounting is considered most scientific system of accounting.
- ix. Under accrual basis of accounting, incomes are recorded on occurrence / receipt of payment of a transaction.
- x. Cash / Accrual basis of accounting is suitable to professionals.

5. Which basis accounting is highlighted in the following statements?

- i. It is not recognized by the Companies Act, 2013.

- ii. Outstanding expenses are considered under this system of accounting.
  - iii. This system of accounting does not make distinction between cash and credit transactions.
  - iv. This system does not make distinction between capital and revenue items.
  - v. True and fair profit for the accounting period cannot be ascertained under this system of accounting.
  - vi. This system of accounting suffers from personal judgement.
  - vii. This system of accounting is adopted by the non-trading concerns.
6. During the Accounting period 2016-17, the total sales of a firm were Rs.7,00,000, out of which cash sales were of Rs.4,50,000. The total expenses for the year were Rs.5,00,000 out of which Rs.2,10,000 are still outstanding. Determine income of the firm for 2016-17 as per:
- i. Cash Basis of Accounting.
  - ii. Accrual Basis of Accounting.
7. M/s Krishna Traders follows accrual basis of accounting. The firm sold goods of Rs.40,000 in June 2016 on 2 months credit. According to the accountant, the sale should be recorded in the month of August, when the cash will be received. Do you agree?
8. During the Financial year 2016-17, Shyam earned total revenue of Rs.4,70,000 by selling the goods. Out of the total sales, there were credit sales of Rs.1,30,000. The total expenses for the year were Rs.2,50,000, out of which Rs.30,000 are still outstanding. Find out Shyam's Income for 2016-17 as per:-
- i. Cash Basis of Accounting.
  - ii. Accrual Basis of Accounting.
9. In a Financial year, Vinod had total sales of Rs.7,40,000, out of which Rs.5,60,000 were received in cash. The total expenses paid by him were Rs.3,80,000, out of which Rs.30,000 belongs to next year and Rs.10,000 are still outstanding. Determine Vinod's Income for the year as per :
- i. Cash Basis of Accounting.
  - ii. Accrual Basis of Accounting.

10. If total assets of the business are Rs.4, 50,000 and outside liabilities are Rs.2, 00,000, calculate owner's equity.
11. An amount of Rs.1,050 is received from a debtor of Rs.1,200 in final settlement. What will be the effect of this transaction on Accounting Equation?
12. Good costing Rs.10,000 are sold at a profit of 20% to Amit.  $\frac{1}{3}^{\text{rd}}$  of the payment is received in cash. How will it affect the Accounting Equation?
13. Give an example of decrease in an asset and decrease in a liability.
14. A debtor paid Rs.12,400 in full settlement of his dues of Rs.13,000. How will it affect the capital?
15. Raman has following assets and liabilities: Cash Rs.18,000; Bank Rs.35,000; Debtors Rs.14,000; Creditors Rs.23,000 Bank Loan Rs.11,000; Vehicle Rs.45,000 and Furniture Rs.10,000. Determine the amount of capital.
16. Calculate the amount withdrawn by Ramesh (Proprietor) and total assets in the following case. He started business with cash of Rs.1, 50,000 as on 1<sup>st</sup> April, 2012. During the year he suffered a loss of Rs.10,000. On 31<sup>st</sup> March, 2012 his capital stood at Rs.1, 12,000, bills payable at Rs.12,000 and Bank Loan at Rs.12,000.
17. What do you understand by Accounting Equation?
18. Indicate whether each of the following transaction would increase, decrease or have no effect on the owner's equity (i.e. capital):
- |                              |                                    |
|------------------------------|------------------------------------|
| a) Purchase goods on credit. | b) Withdrew goods for personal use |
| c) Paid rent to the landlord | d) Invested cash in the business.  |
19. Give an example for a transaction, which results in:
- Decrease in the Assets and decrease in the Liabilities.
  - Decrease in the Assets and decrease in the Capital.
  - Increase in a Asset and decrease in other Asset.
20. Ajeet started a business on 1<sup>st</sup> April, 2016 with a capital of Rs.3,50,000. During the year, he invested Rs.65,000 as capital and withdrew Rs.45,000 for his

personal car. He had goods amounting to Rs.22,000 purchased on credit for which no payment had been made. He also took a loan of Rs.15,000 from ICICI Bank. Calculate the Profit & Loss and Capital as on 31<sup>st</sup> March, 2017, if total Assets of Ajeet as on 31<sup>st</sup> March, 2017 were Rs.3,50,000.

21. (a) Tina commenced business on 1<sup>st</sup> January, 2016 with a capital of Rs.6,00,000 and a loan of Rs.40,000 borrowed from Citibank. On 31<sup>st</sup> December, 2016 his assets were Rs.8,00,000. Calculate his closing capital and profits earned during the year.

(b) If in the above case, the proprietor had introduced fresh capital of Rs.40,000 and had withdrawn Rs.10,000 for personal purpose, calculate his profits.

22. Calculate Total Equity if:

- I. Owner's Equity in the beginning Rs.2,80,000.
- II. Creditors at the end Rs.45,000.
- III. Revenue during the period is Rs.5,80,000.
- IV. Expenses during the same period are Rs.4,00,000

23. Determine the capital of Pranav as on 31<sup>st</sup> March, 2017, if his position as on that date was as follows: He owns Machinery of Rs.40,000; Building of Rs.1,20,000; Furniture of Rs.15,000 and Cash in Hand was Rs.6,000. He owes Rs.45,000 to creditors and has a bank loan of Rs.18,000 taken from SBI Bank.

24. Smriti started a business on 1<sup>st</sup> January, 2016 with capital Rs.2, 20,000. On 31<sup>st</sup> December, 2016, her total assets amounted to Rs.4, 30,000 and liabilities to Rs.1, 17,000. Find out the amount, by which her capital has increased as on 31<sup>st</sup> December, 2016.

25. On 1<sup>st</sup> April, 2012, Jai Dev started a business with capital Rs.1, 50,000 and a Computer worth Rs.25,000.

During the year, following transactions took place:

- (a) Goods purchased from Parul for Rs.20, 000 at a trade discount of 10% and cash discount of 2%. He paid 50% immediately and avail cash discount.
- (b) Bought Motorcycle for office use Rs.25,000.
- (c) Purchased Machinery for Rs.12,500.
- (d) Sold goods for cash Rs.6,500 (costing Rs.6,000)

- (e) Deposited into Bank after opening a new account Rs.20,000.
- (f) Interest received Rs.1,700.
- (g) Commission paid through bank Rs.800.
- (h) Salary paid Rs.8,000 and outstanding Rs.2,500.
- (i) Sundry Expenses paid Rs.200.
- (j) Depreciation charged @ 20% on Machine.

Show the effect of above mentioned transactions by way of an accounting equation. Also prepare Balance Sheet of Jai Dev as on 31<sup>st</sup> March, 2013.

### **Subject- Geography**

Nature of Task: Research & Exploration Activity

Learning objectives

Students would be able to:

- Identify different types of disasters
- Explain their causes/consequences
- Recognize ways to prevent these disasters and escape from their impact
- Co-relate all aspects of Disaster Management
- Stay prepared to handle disasters.

Material required - A-4 size pastel sheets, file cover and other stationary items

Instructions:..

- Project should have student's name, class, sec, year, index, an attractive heading, content in the form of bubbles, picture, cover page, bibliography, conclusion, etc.
- Rubrics
  - i. Presentation of content
  - ii. Relevance
  - iii. Creativity
  - iv. Originality of thoughts
  - v. Timely completion

- The project files should be maintained and preserved for verification, if any, by CBSE.

## PSYCHOLOGY

Read and review a book or article related to psychological issues, evaluate the work by utilizing writings on the same topic, personal insights and experiences, and related material from class.

- Do a survey and evaluate the mind set of people of different age in relation to current situation of working from home due to COVID-19 and its implication on mental health of theirs.
- Evaluate the shift in the preferences of audience towards the content of Cinema (movies, web series, YouTube etc)
- Why do Sociopaths, psychopaths or anti-socials not feel anything while inflicting pain on the victim or doing any heinous crime? Research and evaluate the reasons behind the lack of empathy in such individuals (e.g.- Delhi crime- Jai Singh, Patal Lok-Hathoda Tyagi)
- What actually drives Stalkers to keenly know each and every detail of the person they are stalking and even going to extents of impersonating some other person (cat fishing)? Research and Evaluate.

## SUBJECT – APPLIED MATHEMATICS

**1. Draw graph and write domain and range of the types of functions :(Polynomial function; Rational function; Composite function; Logarithm function; Exponential function; Modulus function; Greatest Integer function, Signum function)**

**2. Solve the given questions in assignment register:**

**1. The number of subsets of a set containing n elements is**

- (a) n                      (b)  $2^n - 1$                       (c)  $n^2$                       (d)  $2^n$

**2. If  $A = \{1, 3, 5, B\}$  and  $B = \{2, 4\}$ , then**

- (a)  $4 \in A$                       (b)  $\{4\} \subset A$                       (c)  $B \subset A$                       (d)  $\{4\} \in A$



3. If  $A = \{1, 2, 3, 4, 5\}$ , then the number of proper subsets of  $A$  is  
 (a) 120 (b) 30 (c) 31 (d) 32
4. For two sets  $A \cup B = A$  iff  
 (a)  $B \subseteq A$  (b)  $A \subseteq B$  (c)  $A \neq B$  (d)  $A = B$
5.  $\{\emptyset\}$  is a null set. State true/false.
6. For any two sets  $A$  and  $B$ ,  $A \cap (A \cup B)$  is equal to  $B$ . State true or false.
7. Write the following sets in roaster form:  
 (i)  $\{x : x \text{ is an integer and } -3 < x < 7\}$   
 (ii)  $\{x : x \in \mathbb{Z}, x^2 < 25\}$   
 (iii)  $\{x : x \text{ is a prime number and divisor of } 60\}$   
 (iv)  $\left\{x : x = \frac{1}{2n-1}, 1 \leq n \leq 5\right\}$
8. Write the following in set builder form:  
 (i)  $\{3, 6, 9, 12\}$   
 (ii)  $\left\{1, \frac{1}{2}, \frac{1}{3}, \frac{1}{4}, \frac{1}{5}, \dots\right\}$   
 (iii)  $\left\{\frac{1}{2}, \frac{2}{5}, \frac{3}{10}, \frac{4}{17}, \frac{5}{26}, \frac{6}{37}, \frac{7}{50}\right\}$   
 (iv)  $[-23, 5)$
9. State whether the following sets are finite or infinite :  
 (i)  $\{x : x \in \mathbb{R} \text{ and } x^2 + 1 = 0\}$   
 (ii) The set of all positive integers greater than 1000.  
 (iii) The set of all points on the circumference of a circle.
10. For the following sets, find  $P(A)$  and  $n\{P(A)\}$  :  
 (i)  $\{-1, 0, 1\}$

(ii)  $\{5, \{7, 8\}\}$

**11.** If  $A = \{2x : x \in \mathbb{N} \text{ and } 1 \leq x \leq 4\}$ ,  $B = \{x + 2 : x \in \mathbb{N} \text{ and } 2 \leq x \leq 5\}$  and  $C = \{x : x \in \mathbb{N} \text{ and } 4 < x < 8\}$ , find:

- (i)  $A \cup B$                       (ii)  $A \cap B$                       (iii)  $(A \cup B) \cap C$   
(iv)  $B - A$                       (v)  $A - (A \cap B)$

**12.** If  $U = \{a, b, c, d, e\}$ ,  $A = \{a, b, c\}$  and  $B = \{b, c, d, e\}$  then verify that:

- (i)  $(A \cup B)' = (A' \cap B')$                       (ii)  $(A \cap B)' = (A' \cup B')$

**13.** In a group of 50 persons, 30 like tea, 25 like coffee and 16 like both tea and coffee. How many like

- (i) Either tea or coffee                      (iii) Neither tea nor coffee  
(ii) Tea but not coffee                      (iv) Coffee but not tea

**14.** A survey conveys the result that 21 persons liked product soft drink, 26 liked coconut water and 29 liked milk shakes. If 14 persons liked product soft drink and coconut water; 12 persons liked product soft drink and milk shakes 14 persons liked coconut water and milk shakes and 8 liked all the three products. Find :

(i) How many of them liked at least 2 products?

(ii) How many liked at most 2 products?

**15.** A survey of 500 television viewers produced the following information; 285 watch football, 195 watch hockey, 115 watch basketball, 45 watch football and basketball, 50 watch hockey and basketball, 50 do not watch any of the three games, 20 watch all the three games.

- (i) Depict the given information with the help of Venn diagram.  
(ii) How many watch exactly one of the three games?  
(iii) How many watch basketball and football but not hockey?  
(iv) How many watch hockey or football but not basketball?  
(v) How many watch only two games?

**16.** In a university out of 100 teachers, 15 like reading newspaper only, 12 like learning computers only and 8 like watching movies only on TV in the spare time. 40 like reading

newspapers and watching movies, 20 like learning computer and watching movies, 10 like reading news paper and learning computer, 65 like watching movies. Draw a Venn diagram and show the various portions and hence evaluate the number of teachers who:

- (i) Like reading newspapers
- (ii) Like learning computers
- (iii) Did not like to do any of the things mentioned above.

17. Let  $A = \{2\}$ ,  $B = \{3,4,5\}$  and  $C = \{5,6\}$  then number of elements in  $A \times (B - C)$  are

- (a) 1
- (b) 2
- (c) 6
- (d) 3

18. For two non empty sets A and B, if  $n(A) = m$  and  $n(B) = n$  then the total number of relations from set A to set B is

- (a)  $m + n$
- (b)  $mn$
- (c)  $2^{mn}$
- (d)  $2(m + n)$

19. Given  $R = \{(x,y); y = x - 3, x,y \in \mathbb{Z}\}$ . State which of the ordered pairs belongs to the relation:

- (a) (5,2)
- (b) (1,2)
- (c) (0,-3)
- (d) (7,-4)

20. Given set  $A = \{1,2,3,\dots,10\}$ . Relation R is defined in set A as  $R = \{(a,b) \in A \times A: a = 2b\}$ . Then range of relation R is

- (a)  $\{2,4,6,8,10\}$
- (b)  $\{1,3,5,7,9\}$
- (c)  $\{(2,1), (4,2), (6,3), (8,4), (10,5)\}$
- (d)  $\{1,2,3,4,5\}$

21. Find the value of a & b when  $\left(\frac{a}{3} + 1, b - \frac{1}{3}\right) = \left(\frac{5}{3}, \frac{2}{3}\right)$

22. Let  $A = \{1, 2, 3, 5\}$  and  $B = \{4, 6, 9\}$ . Let  $R = \{(x, y) : |x - y| \text{ is even, } x \in A \text{ \& } y \in B\}$ .

Write R in roaster form.

23. The relation  $R = \{(a,1), (b,-1), (c,4), (a,-4), (d,5)\}$  is function also. State true or false.

24. Let  $A = \{1, 2, 3, 5\}$  and  $B = \{4, 6, 9\}$ . Let  $R = \{(x, y) : |x - y| \text{ is even, } x \in A \text{ \& } y \in B\}$ .

Write R in roaster form.

25. If A, B are two sets such that  $n(AXB) = 6$  and some elements of AXB are  $(-1,2)$ ,  $(2,3)$  and  $(4,3)$ , then find AXB and BXA.

26. If  $A = \{-1, 2\}$ , find  $A \times A$  and  $A \times A \times A$ . Also find the number of relations on A.

27. If  $A = \{1, 3, 5\}$ ,  $B = \{3, 4\}$  and  $C = \{2, 3\}$ , verify that:

- (i)  $A \times (B \cup C) = (A \times B) \cup (A \times C)$
- (ii)  $A \times (B \cap C) = (A \times B) \cap (A \times C)$
- (iii)  $A \times (B - C) = (A \times B) - (A \times C)$

28. Let  $A = \{1, 2, 3, 4, 5\}$  and  $B = \{1, 2, 3, 4\}$ . Let R be the relation "is less than" from A to B.

- (i) List all the elements of R.
- (ii) Find the domain, co-domain and range of R.
- (iii) Depict the above relation by an arrow diagram.

29. Let  $A = \{2, 3, 5, 7\}$  &  $B = \{3, 5, 9, 13, 15\}$ . Let  $f = \{(x, y) : x \in A, y \in B \text{ and } y = 2x - 1\}$ .

- (i) Write f in the roaster form.
- (ii) Show that f is a function from A to B.
- (iii) Find the domain and range of f.

30. Let  $A = \{1, 2, 3, 4\}$ ,  $B = \{1, 5, 9, 11, 15, 16\}$  and  $f = \{(1,5), (2,9), (3,1), (4,5), (2,11)\}$ .

Are the following true? Justify your answer in each case.

- (i) f is a relation from A to B
- (ii) f is a function from A to B

### Fine Art

#### Holiday Assignments

1. Still life-1( ,includes min. 3 objects ,Any color medium)size- half imperial sheet

2. Painting composition-1 ( Any topic but in color,should contain 5-6 human figures) size- half imperial sheet

3. Sketches in pencil shading(6)

PPT assignment allotment-

1. Rashee

Painting( water+ poster colour)

2. Vrinda( All the art works in your syllabus)

3. Pakhee( Still life- color/ pencils shading)

4. AASHI( Waste material art but utility art) at least 10 items.

5. Kehi( Textures in paintings)

6. Somya( Acrylic color)

7. Shrena( plants+ trees+ flowers + nature study in color / pencil shading)

8. Aditya( Canvas+ oil colors)

9. Eshita( Dry mediums- dry pastel, oil pastel, pencil color, charcoal, etc)

10. Amishi ( Pencil shading)

11. Karishma( Human anatomy+ sketching)

12. Kamakshi( perspective drawing)

Note: All the students , must include minimum 5 different artists or art works related to your topic in your ppt).

### Computer Science

Write following programs in python

- Input a welcome message and display it.
- Input two numbers and display the larger / smaller number.
- Input three numbers and display the largest / smallest number.
- Given two integers x and n, compute  $x^n$ .
- Write a program to input the value of x and n and print the sum of the following series:

$$\begin{aligned}
 &\triangleright 1+x+x^2+x^3+x^4+\dots\dots\dots X^n \\
 &\triangleright 1-x+x^2-x^3+x^4-\dots\dots\dots X^n \\
 &\triangleright x + \frac{x^2}{2} - \frac{x^3}{3} + \frac{x^4}{4} - \dots\dots\dots \frac{x^n}{n} \\
 &\triangleright x + \frac{x^2}{2!} - \frac{x^3}{3!} + \frac{x^4}{4!} - \dots\dots\dots \frac{x^n}{n!}
 \end{aligned}$$

- 
- Determine whether a number is a perfect number, an armstrong number or a palindrome.
- Input a number and check if the number is a prime or composite number.
- Display the terms of a Fibonacci series.
- Compute the greatest common divisor and least common multiple of two integers.
- Count and display the number of vowels, consonants, uppercase, lowercase characters in string.
- Input a string and determine whether it is a palindrome or not; convert the case of characters in a string.

### Physical Education

Students complete their Record File

| S.NO | PRACTICAL INCLUDE IN FILE  |
|------|--|
| 1.   | Labelled diagram of 400 M Track and Field with computations.                             |
| 2.   | Computation of BMI from family or neighborhood and graphical representation of the data. |
| 3.   | Labelled diagram of field and equipment of any individual one game of your choice.       |

|    |   |
|----|---|
| 4. | List the current national awardees (Dronacharya Award, Arjuna Award and Rajiv Gandhi Khel Ratna Award ) |
| 5. | Pictorial presentation of any 5 Asanas for improving concentration.                                     |

### **Subject- Political Science**

#### **General Instruction:**

- ❖ Answer question I. a, b and c on A4 size sheets.
- ❖ Be innovative and creative in making the poster.

- I. Which is the most important Fundamental Right in your opinion?
  - a. Explain the provisions of the right as stated in the Indian Constitution.
  - b. Give arguments to justify why it is most important. *(not more than 100 words)*
  - c. Discuss what could have happened if this right was not available to the people. *(not more than 100 words)*
  - d. On an A3 size sheet make a poster depicting the true essence of the right.