

HOLIDAY HOMEWORK CLASS 12

PHYSICS

1. Prepare chapter 1,2,3 for periodic test- I
2. Read and prepare notes of chapter Dual Nature of Matter and radiation, Atom and nuclei.
3. Draw all the ray diagram of reflection and refraction through spherical surfaces (convex mirror and concave mirror, convex lens and concave lens)
4. Complete all the experiments in file done in physics lab.
5. Prepare project for AISSCE 2020.
6. Visit at CBSE site for syllabuys.

PROJECTS

1. To study various factors on which the internal resistance/EMF of a cell depends.
2. To study the variations in current flowing in a circuit containing an LDR because of a variation in
 - (a) The power of the incandescent lamp, used to 'illuminate' the LDR (Keeping all the lamps at a fixed distance).
 - (b) The distance of an incandescent lamp used to illuminate the LDR
3. To find the refractive indexes of (a) water (b) oil using a plane mirror, a equiconvex lens and an adjustable object needle.
4. To design an appropriate logic gate combination for a given truth table
5. To investigate a relation between the ratio of,
 - (a) Output and input voltage
 - (b) Number of turns in the secondary coils and primary coil of a self-designed transformer
6. To investigate the dependence of the angle of deviation on the angle of incidence using a hollow prism filled one by one with different transparent fluids
7. To estimate the charge induced on each one of the 2 identical Styrofoam ball suspended in a vertical plane by making use of Coulomb's law.
8. To set up common base transistor circuit and to study its input and output characteristic and to calculate its current gain
9. To study the factor on which the self-inductance of a coil depends by observing the effect of this coil, when put in series with resistor in a circuit fed up by an AC source of adjustable frequency.
10. To construct a switch using a transistor and to draw the graph between the input and output voltage and mark the cut off, saturation and active regions.
11. To study earth magnetic field using tangent galvanometer.

SOLVE THE FOLLOWING ASSIGNMENT IN THE PHYSICS NOTE BOOK

I - A carbon resistor has coloured strips - yellow , violet , gold and gold . What is its resistance

II -(a) Find out capacitance of a capacitor with a dielectric slab of thickness T b/w the capacitor plates having separation D .

(b) What happens when the dielectric slab is replaced by a conducting slab of same thickness .

(c) Calculate the charge on the capacitor when key K is closed .

III - A potential difference V is applied across a conductor of length L and diameter D .How

are the electric field E and the resistance R of the conductor affected when (i) V is halved (ii) L is halved (iii) D is doubled. Justify your answer.

IV - Define the term 'electrostatic potential'. Give the dependence of electrostatic potential

VI - Two equal like charges are placed on the vertices of an equilateral triangle. What charge must be placed on the third vertex so that the total potential energy is zero. - The flux of the electrostatic field, through the closed spherical surface S' , is found to be zero?

VI I- State the underlying principle of potentiometer. Describe briefly, giving necessary circuit diagram, how a potentiometer is used to measure the internal resistance of a given cell.

VIII - What is an electric dipole? Find an expression for the field strength at a distance X from the electric dipole on its equatorial line. Q2 Solve these questions.

1. Calculate the total positive or negative charge on a 3.11g copper penny. Given Avogadro number = 6.02×10^{23} , atomic number of copper = 29 and atomic mass of copper = 63.5.
2. The electrostatic force of repulsion between two equally positively charged ions is 3.7×10^{-9} N, when they are separated by a distance of 5 Å. How many electrons are missing from each ion?
3. A free pith-ball of 8g carries a positive charge of 5×10^{-8} C. What must be the nature and magnitude of charge that should be given to a second pith-ball fixed 5 cm vertically below the former pith-ball so that the upper pith-ball is stationary?
4. (a) Two insulated charged copper spheres A and B have their centers separated by a distance of 50 cm. What is the mutual force of electrostatic repulsion, if charge on each is 6.5×10^{-7} C? The radii of A and B are negligible as compared to the distance of separation.
(b) What is the force of repulsion, if (i) each sphere is placed in water? (Dielectric constant of water = 80).
5. Three point charges are kept at the vertices A, B and C respectively of an equilateral triangle of side 20 cm. What should be the sign and magnitude of the charge to be placed at the mid-point M of side BC, so that the charge at A remains in equilibrium?

HHW CLASS 12 2019-20

MATHS

1 Evaluate $\begin{vmatrix} a+ib & c+id \\ -c+id & a-ib \end{vmatrix}$

Express the matrix A as the sum of a symmetric and a skew symmetric matrix, where:

$$A = \begin{bmatrix} 3 & -2 & -4 \\ 3 & -2 & -5 \\ -1 & 1 & 2 \end{bmatrix}$$

2. If $A = \begin{bmatrix} a & 2 \\ 2 & a \end{bmatrix}$ and $|A|^3 = 125$, then find a

Find the inverse of each of the matrices, if it exists.

$$\begin{bmatrix} 2 & -3 & 3 \\ 2 & 2 & 3 \\ 3 & -2 & 2 \end{bmatrix}$$

3. Using properties of determinants, show that $\begin{vmatrix} b+c & a & b \\ c+a & c & a \\ a+b & b & c \end{vmatrix} = (a+b+c)(a-c)^2$

4. Without expanding prove that $\begin{vmatrix} x+y & x & x \\ 5x+4y & 4x & 2x \\ 10x+8y & 8x & 3x \end{vmatrix} = x^3$

5.. Using matrices, solve the following system of equations:

a. $x + 2y - 3z = -4$

$2x + 3y + 2z = 2$

$3x - 3y - 4z = 11$

b. $4x + 3y + 2z = 60$

$x + 2y + 3z = 45$

$6x + 2y + 3z = 70$

6. Find the product AB, where $A = \begin{bmatrix} 1 & -1 & 0 \\ 2 & 3 & 4 \\ 0 & 1 & 2 \end{bmatrix}$, $B = \begin{bmatrix} 2 & 2 & -4 \\ -4 & 2 & -4 \\ 2 & -1 & 5 \end{bmatrix}$ and use it to solve the equations $x - y = 3$, $2x + 3y + 4z = 17$, $y + 2z = 7$

7. Using elementary transformations, find the inverse of the matrix

$$\begin{bmatrix} 1 & 2 & -2 \\ -1 & 3 & 0 \\ 0 & -2 & 1 \end{bmatrix}$$

8. Using matrices, solve the following system of linear equations:

$2x - y + z = 3$

$-x + 2y - z = -4$

$x - y + 2z = 1$

9. If $A = \begin{pmatrix} 2 & 3 & 5 \\ 3 & 2 & 4 \\ 1 & 1 & 2 \end{pmatrix}$, find A^{-1} . Using A^{-1} solve the following system of equations $2x - 3y + 5z = 16$; $3x + 2y - 4z = -4$; $x + y - 2z = -3$

10. Using matrix method, solve the following system of equations:

$2/x + 3/y + 10/z = 4$, $4/x - 6/y + 5/z = 1$, $6/x + 9/y - 20/z = 2$

11. Use product $\begin{bmatrix} 1 & -1 & 2 \\ 0 & 2 & -3 \\ 3 & -2 & 4 \end{bmatrix} \begin{bmatrix} -2 & 0 & 1 \\ 9 & 2 & -3 \\ 6 & 1 & -2 \end{bmatrix}$ to solve the system of equations :

$x - y + 2z = 1$

$2y - 3z = 1$

$3x - 2y + 4z = 2$

12. Using properties of determinants, solve the following for x :

$$\begin{vmatrix} x-2 & 2x-3 & 3x-4 \\ x-4 & 2x-9 & 3x-16 \\ x-8 & 2x-27 & 3x-64 \end{vmatrix} = 0$$

13. Using properties of determinants, solve the following for x :

$$\begin{vmatrix} a+x & a-x & a-x \\ a-x & a+x & a-x \\ a-x & a-x & a+x \end{vmatrix} = 0$$

14. prove that

$$\begin{vmatrix} b^2c^2 & bc & b+c \\ c^2a^2 & ca & c+a \\ a^2b^2 & ab & a+b \end{vmatrix} = 0$$

15. prove that

$$\begin{vmatrix} -bc & b^2+bc & c^2+bc \\ a^2+ac & -ac & c^2+ac \\ a^2+ab & b^2+ab & -ab \end{vmatrix} = (ab+bc+ca)^3$$

16. prove that

$$\begin{vmatrix} (b+c)^2 & ab & ca \\ ab & (a+c)^2 & bc \\ ac & bc & (a+b)^2 \end{vmatrix} = 2abc(a+b+c)^3$$

17. Using properties of determinants, prove that : $\begin{vmatrix} a & a+b & a+2b \\ a+2b & a & a+b \\ a+b & a+2b & a \end{vmatrix} = 9b^2(a+b)$

18. If a,b and c are all positive and distinct, show that $\Delta = \begin{vmatrix} a & b & c \\ b & c & a \\ c & a & b \end{vmatrix}$ has a negative value.

19. Let $A = \{1,2,3,\dots,9\}$ and R be the relation in $A \times A$ defined by $(a,b) R(c,d)$ iff $a+d=b+c$ for $(a,b),(c,d) \in A \times A$. Prove that R is an equivalence relation and also find the equivalence class $[(2,5)]$.

20. Determine whether the relation R defined on the set of all real numbers as

$R = \{(a,b) : a,b \in \mathbb{R} \text{ and } a-b + \sqrt{3} \in S, \text{ where } S \text{ is the set of all irrational numbers}\}$, is reflexive, symmetric and transitive.

21. If the function $f : \mathbb{R} \rightarrow \mathbb{R}$ be given by $f(x) = x^2 + 2$ and $g : \mathbb{R} \rightarrow \mathbb{R}$ be given by $g(x) = \frac{x}{x-1}$, $x \neq 1$, find fog and gof and hence find fog(2) and gof(-3).

22. If R_1 and R_2 are Equivalence Relation in a set A, Show that $R_1 \cap R_2$ is also an equivalence relation.

23. Let $A = \mathbb{R} - \{-4/3\}$ and $B = \mathbb{R} - \{4/3\}$. Consider the function $f : A \rightarrow B$ defined by

$f(x) = (4x+3)/(3x+4)$. Is f one-one and onto? find the inverse of f .

find $f^{-1}(0)$ and x such that $f^{-1}(x)=2$

KV SECTOR-12 DWARKA

HOLIDAYS ASSIGNMENTS CLASS-XII SUBJECT-ENGLISH

Q.1 Read the following passages and do as instructed – (Do in the Reading Section of your notebook)

1. a) Comprehension passages

PASSAGE-1

1. The children probably don't know, or they don't care, the hugely popular WWF wrestling matches are actually all staged acts. The Hulks, the Undertaker or whatever else they are called-never really punch or kick as hard as they might appear doing on the show. It's all a show, a thrilling show.

2. So, you can't really blame children for getting hooked. But does that necessarily mean the show is entirely responsible for beating 12-year-old Subin Kumar got from his WWF inspired friends? Can viewing or watching violence on TV actually promote aggressive behaviour in children?

3. Media experts and social scientists have been wrestling with this question for decades and thousands of studies have been done on it. And most of them reached the same conclusion-media violence is responsible for aggressive behavior in children.

4. Research has found that the more violence children watch on television, the more likely they may act in aggressive ways towards others. Also, they become less sensitive to others pain and are less likely to help a victim of violence.

5. A study of violence on Indian television and its impact on children commissioned by UNESCO accused the idiot box of "bombarding young minds with all kinds of violent images, cutting across channels, programmes and viewing times."

6. Not only studies, but also incidents go to prove that children who watch violent episodes show increased likelihood of behaving aggressively.

7. There have been reports from all over the country of children hurting themselves while trying to ape the superman feats of Shaktiman, the superhero of Indian TV. Then there was the six-year-old child of Lucknow who leapt off the balcony of his second floor flat trying to imitate a bungee jumping drop shown in a soft drinks commercial.

8. There's no doubt that media is a powerful teacher and contributes greatly to the way we act and behave. In some cases like these, the effects are immediate and in others there is a "sleeper effect", where the results show up much later.

9. Experts say it's incorrect to blame the media squarely. How would you explain the aggressive behavior of a child who has never been exposed to television or any other media? So, while there is mounting evidence to link media violence and actual violence, most of it does not prove a direct cause-and-effect relationship. Because no one so far has been able to prove why and how TV affects some people and not the others. "we also have to take into account individual differences and vulnerabilities as human behavior is result of many factors," points out Dr.

Vasantha R. Patri, a counsellor, adding, “violence viewing is only one of the myriad influences on a growing child.”

10. Patri says there exists a population of risk individuals whose anger, aggression and anti-social tendencies are already quite high for whatever reason. Other factors like individual predisposition of the child, parental attitudes and reaction to aggression are probably equally important. In fact, she says that in most cases media is only the fourth most important influence in child’s life-with parents, teachers and peers being the first three.

11. Patri points out that the growing “here-and-now” culture in which kids are getting used to immediate gratification is leading to an intolerant society on the whole. “Children are not taught how to handle failure and conflict,” she says. “As a result, they resort to aggression.”

12. But media critics refuse to buy it. They insist the content of media needs to be monitored and care be taken to reduce violence if not remove it. But even if all the gore and violence is completely removed from the media, will it make a significant difference in aggressive behavior of children? And then how do you justify the facts that studies have shown that viewing violence on TV also provides an opportunity to discharge the pent-up, aggressive feelings of anger, hostility and frustration.

13. “The problem is not with the media, but the lack of media education,” points out Patri. “No one teaches the children how to assess the reality status of TV programmes.” Good parenting, she says, is perhaps the greatest defence against the negative effects of violent images on TV.

14. Experts say it’s time that parents and teachers took a long, hard look at themselves in the mirror. Say’s Patri, “Most parents treat TV as a baby-sitter when it suits them. And when something goes wrong, they turn around and blame TV for it!”

Shweta Rajpal

QUESTIONS:

A. Choose the most appropriate option:

- (a) Violent behaviour is the outcome of.....
 - (i) Lack of media awareness
 - (ii) Lack of sensitivity
 - (iii) Increase in population
 - (iv) imperfection

- (b) Children fail to understand that the stunts shown on the screen are.....
 - (i) Real
 - (ii) Fake
 - (iii) Manipulated
 - (iv) None of the above

- (c) Parents consider TV a
 - (i) Babysitter
 - (ii) Problem
 - (iii) Boon
 - (iv) None of the above

- (d) Aggressive behavior in children can be best handled by.....
 - (i) Teachers
 - (ii) Parents
 - (iii) Both teachers and parents
 - (iv) Children themselves

B. Answer the following questions briefly:

- (a) Does violence on TV promote children's aggressive behavior? What is the opinion of media experts and social scientists?
- (b) What two points have emerged from research on media violence?
- (c) What two incidents are cited to prove the aggressive behavior of children as an outcome of watching violence on TV?
- (d) What factors other than violence viewing are important for causing aggressiveness in child?
- (e) How, do you think can the problem be solved?
- (f) How are children becoming impatient?

C. Find words in the passage similar in meaning as:

- (a) Exciting (Para 1)
- (b) An extremely large number of something

PASSAGE -2

1. Among the natural resources which can be called upon in national plans for development, possibly the most important is human labour. Since the English language suffers from a certain weakness in its ability to describe groups composed of both male and female members, this is usually described as "manpower".
2. Without a productive labour force, including effective leadership and intelligent middle management, no amount of foreign assistance or of natural wealth can ensure successful development and modernization.
3. The manpower for development during the next quarter century will come from the world's present population of infants, children and adolescents. But we are not sure that they will be equal to task. Will they have the health, the education, the skills, the socio-cultural attitudes essential for the responsibilities of development?
4. For far too many of them the answer is no. The reason is basic. A child's most critical years, with regard to physical, intellectual, social, and emotional development, are those before he reaches five years of age. During those critical formative years he is cared for almost exclusively by his mother and in many parts of the world the mother may not have the capacity to raise a superior child. She is incapable of doing so by reason of her own poor health, her ignorance and her lack of status and recognition of social and legal rights, of economic party of independence. One essential factor has been overlooked and ignored. The forgotten factor is the role of women. Development will be handicapped as long as women remain second class citizen, uneducated

without any voice in family or community, decisions without legal or economic status, married when they are still practically children, and henceforth producing one baby after another, often to see half of them die before they are of school age.

5. We can enhance development by improving 'women power', by giving women the opportunity to develop themselves. Statistics show that the average family size increases in inverse ratio to the mother's years of education- is lowest among college graduates, highest among those with only primary school training, or no education. Malnutrition is most frequent in large families, and increases in frequency with each additional sibling. The principle seems established that an educated mother has healthier and more intelligent children, and that is related to the fact that she has fewer children. The tendency of educated, upper class mothers to have fewer children operates even without access to contraceptive services.

6. The educational level of women is significant also because it has a direct influence upon their chances of employment, and the number of employed women in country's total labour force has a direct bearing on both the gross national product and disposable income of the individual family. Disposable income, especially in the hands of women, influences food purchasing and therefore the nutritional status of the family. The fact that the additional income derives from the paid employment of women provides a logical incentive to restrict the size of the family.

QUESTIONS:

A. Choose the most appropriate option:

(a) Among the natural resources which can be called upon in national plans for development.....

- (i) The most important is certainly human labour.
- (ii) The most important is possibly human labour.
- (iii) The least developed is certainly human labour.
- (iv) The least developed is undoubtedly human labour.**

(b) Without a productive labour force, including effective leadership and intelligent middle management.....

- (i) No productive work is possible.
- (ii) Entrepreneurs will incur heavy losses.
- (iii) Economic development will not keep pace with national movements.
- (iv) No amount of foreign assistance or of natural wealth can ensure successful development and modernization.

(c) Development will be handicapped as long as women remain.....

- (i) second class citizen
- (ii) third class citizen
- (iii) first class citizen
- (iv) fourth class citizen

(c) Disposable income in the hands of women strengthen

- (v) Family bond
- (vi) Nutritional status of the family
- (vii) Spiritual status of the family
- (viii) None of these

B. Answer the following questions briefly:

- (a) What will be the source of the manpower development during the next quarter century?
- (b) During which period is the child growth maximum?
- (c) Why can't the first teacher of a child be effective in many parts of the world?
- (d) What will happen to development if the womenfolk is neglected?
- (e) What is the difference between an educated mother and an illiterate mother?
- (f) How can we accelerate the rate of progress?

C . Find words in the passage similar in meaning as:

- (a) Increase (Para 5)
- (b) Important(Para 6)

PASSAGE-3

1. Since its invention a little over 130 years ago. The interview has become a commonplace of journalism. Today, almost everybody who is literate will have read an interview at some point in their lives, while from the other point of view, several thousand celebrities have been interviewed over the years, some of them repeatedly. So it is hardly surprising that opinions of the interview – of its functions, methods and merits – vary considerably. Some might make very extravagant claims for it as being, in its highest form, a source of truth, and, in its practice, an art. Others, Usually celebrates who see themselves as its victims, might despise the interview as an unwarranted intrusion into their lives, or feel that it somehow diminishes them, just as in some primitive cultures it is believed that if one takes a photographic portrait of somebody then one is stealing that person's soul.

2. V.S Naipaul 'feels that some people are wounded by interviews and lose a part of themselves', Lewis Carroll, the creator of Alice in wonderland, was said to have had ' a just horror of the interviewer' and he never consented to be interviewed- it was his horror of being lionized which made him thus repel would be acquaintances, interviewers, and persistent petitioners for his autograph and he would afterwards relate the stories of his success in silencing all such people with much satisfaction and amusement. Rudyard Kipling expressed an even more condemnatory attitude towards the interviewer. His wife, Caroline, writes in her diary for 14 October 1892 that their day was 'wrecked by two reporters from Boston. She reports her husband as saying to the reporters, "why do I refuse to be interviewed? Because it is immoral! It is a crime, just as much of a crime as much merits punishment. It is cowardly and vile. No respectable man would ask it, much less give it," yet Kipling had himself perpetrated such an 'assault' on Mark Twain only a few years before. H.G Wells in an interview in 1894 referred to 'the interviewing ordeal', but was fairly frequent interviewee and forty years later found himself interviewing Joseph Stalin.

3. Saul Bellow, who has consented to be interviewed on several occasions, nevertheless once described interviews as being like thumbprints on his windpipe. Yet despite the drawbacks of the interview, it is supremely serviceable medium of communication. "These days more than at any other time, our most vivid impressions of our contemporaries are through interviews," Denis Brian has written. "Almost everything of moment reaches us through one man asking questions of another. Because of this, the interviewer holds a position of unprecedented power and influence."

- I. On the basis of your understanding of the above passage, answer each of the questions given below by choosing the correct option:
- a) The positive opinion regarding interview is
 - i. An intrusion
 - ii. Source of truth
 - iii. Information in complex form
 - iv. Both first and third
 - b) Negative opinion on interview is.....
 - i. An art
 - ii. Honest information
 - iii. An ordeal
 - iv. Development of personality
 - c) The creator of 'Alice in Wonderland' is
 - i. G. H. Wells
 - ii. Kipling

- iii. Denis Brian
- iv. Lewis Carroll
- d) Kipling refused to be interviewed because according to him it is
 - i. A crime
 - ii. An assault
 - iii. Immoral
 - iv. All the three above.

II. Answer the following questions briefly:

- e) What do you understand by ‘thumbprints on his wind pipe’?
- f) What are the major view points on people on interviews?
- g) How are the celebrities a victim of interviews?
- h) What is one of the advantages of interviews?
- i) Give two extravagant views / claims about interviews expressed by people.
- j) In the present time, how do we get to know about our contemporaries?
- k) Find words from the passage which means the same as each of the following: -
 - i. Lessens the authority, dignity or reputation (Para – 1)
 - ii. Refusing to give up (Para – 2)

...

PASSAGE-4

Read the following passage carefully.

(10 marks)

1. As religious people believing in God, we are all aware of the influence of prayer in our individual lives. It is true our temples, gurudwaras, churches and mosques reverberate with the prayers of the devout on festive occasions and even in the course of daily life. When individuals face dire situations, often they are led into prayer; their faith thus opens for them a source of comfort and encouragement in their hour of need.
2. But how does India as collective entity, exercise its faith in prayer? It may be recalled that during the freedom struggle and subsequently after Independence, the Father of the Nation used to lead the people in prayer on matters affecting its destiny. The men of different faiths used to take part in such meetings, which gave them a sense of purpose and also a sense of solidarity as people sharing one destiny.
3. Since the Mahatma fell to the bullets of an assassin, no one else probably came forward to provide leadership to an exercise of prayer at the national level. No doubt, people of all faiths had organized prayers at their places of worship in the aftermath of national tragedies like the Gujarat Earthquake of the Orissa cyclone. The hijacking of an Indian plane with its passengers of Kandahar in the recent past had moved this nation to pray.

The whole nation again had taken to prayers in mass on two other occasions when Amitabh Bachchan fell seriously on the sick bed.

4. Man's need for prayer is as great as his need for bread. As food is necessary for the body, prayer is necessary for the soul. I have not a shadow of doubt that the strife and quarrels with which our atmosphere is so full today are due to the absence of the spirit of true prayer. True prayer never goes unanswered," wrote Gandhiji. According to Vasudevan, Secretary of the Rajghat Samadhi Samiti, all-religion prayer meetings are held every Friday at Rajghat from 4 p.m. to 5.15 p.m.
5. It is said that the act of prayer changes people and situations. There is a general impression that prayer is an act of seeking favours from God for selfish ends. It is as if all praying people are only interested in taking their shopping lists to their Maker!

For from it, the very act of praying teaches one to sympathize with those who suffer. It broadens one's vision and outlook. It builds up one's character by imparting a sense of responsibility towards other people and situations.

6. The latest example of a praying nation comes from the United States which is often labelled as too materialistic. Speaking at the national Prayer Breakfast at Washington in the second week of February, President George Bush praised Americans of all faiths for turning to prayer in the wake of the September 11 terrorist attacks. He said he had spent much time 'one bended knee' since terrorists attacked the World Trade Centre and the Pentagon, killing more than 3000 people.
7. Regardless of the religious affiliations, people in the affected areas showed an exemplary sense of togetherness in the hour of tragedy. All differences of religion, ethnicity, race and language were forgotten as volunteers got busy assuaging the pain and sorrow felt by the victims. The American example has several lessons for India which is also a pluralistic society. It has demonstrated that differences of religion and ethnicity need not stand in the way of the nation unitedly facing all its challenges. If it is true that all religious faiths teach

tolerance, humility and the value of helping neighbours, then the religious leaders of this nation could also engender unity and oneness of purpose by coming together periodically to pray for the nation. And when they focus on the fact that all people, regardless of their differences share one common destiny, there could be greater communal harmony. Such a consciousness ought to pave the way for peace in society.

1. On the basis of your reading of the passage, answer the following questions by choosing the most appropriate option.

(1x2=2 marks)

1. People often pray when they _____
 - (a) Are sick
 - (b) Face dreadful situations
 - (c) Want their desires to be fulfilled
 - (d) Are depressed
2. What is the general impression about the prayer?
 - (a) It provides food to the soul.
 - (b) It is an act of seeking favour from God.
 - (c) It teaches us to sympathise with those Who suffer.
 - (d) It imparts in us a sense of responsibility towards other people and situations.

II. Answer the following questions as briefly as possible.

(1x6=6 marks)

1. Comment on the importance of the collective prayer organized by the Father of the Nation.
2. On what occasions did the people of all faiths organize prayers at their places of worship?
3. What has the absence of the true prayer resulted in?
4. What does the act of praying teach us?
5. What lesson does the America example give to India?
6. What do all religious faiths teach?

III. Find words from the passage which are similar in meaning to the following:

(2 marks)

- (a) Killer (para 4)
- (b) Shown/displayed (para4)

PASSAGE-5

Read the following passage and answer the questions that follow:

(10 marks)

1. Nuclear capability gives a status to the country in the community of nations. No nation can afford to make destructive use of the nuclear energy without risking a World War. That is why America did not make use of nuclear weapon in the Vietnam War though it had become a matter of prestige for her. Similarly Russia preferred to pull out her missile bases from Cuba instead of coming in direct conflict with a nuclear power, America. But India, since she started adopting nuclear technology, had decided to make only peaceful use of nuclear energy. The fear expressed by Pakistan and the comments made in the Chinese press are more for the sake of propaganda than for the projection of truth.
2. India needs nuclear energy in order to meet her power shortage. She has been depending upon hydroelectric power which is undependable because of the uncertainty of rainfall. Good quality of coal which is another source of energy cannot be extracted commercially because it lies very deep and the cost of extraction is very high. India is not producing much of oil, rather she has to import nearly 74 per cent of her total consumption. So the only alternative with India is to have a cheaper and more dependable source of energy. The known reserves of thorium in India are sufficient to last many hundred years. That is why India has already commissioned two nuclear power stations, one at Tarapur and the other at Rana Pratap Sagan. Each one has the installed capacity of producing 420 M.W. of electricity. Two other at Kalpakkam, are operational. This energy will be able to meet the power shortage throughout the country. If industries work at their full capacity, production will be higher and so per capita income will increase and inflation will be neutralized.
3. With the help of controlled nuclear explosions, artificial dams can be made. In fact for building a dam there should be two huge mountain walls enclosing a deep valley just near the course of a river. These conditions are not available at all the places. So with the help of controlled nuclear explosions mountains can be blown up. This can also help in laying roads in the mountainous areas. In fact, some of the borders of India have mountainous terrain and the movement of the army is quite difficult. So even for the sake of national security it is necessary to have roads in those areas.
4. With the help of radiation the shelf life of vegetables and fruits can be increased. In the tropical countries like India, it is necessary that the perishable fruit stuffs are preserved for a long time. Radiation can check the sprouting of onions and potatoes which are much in demand in foreign countries. Similarly fruits like bananas and mangoes which have much export potential can be preserved for a very long time. The texture and taste of the fruit do not undergo any change.
5. Nuclear technology can also be harnessed for medical purposes. It is said that radioactive iodine is used for detecting the disease of the thyroid glands. Similarly, India of U.N. experts, radiated vaccine which can immunize sheep from lungworm disease, which used to take a heavy toll of sheep every year.
6. Properly processed nuclear fuel is also used for artificial satellite in space. Weather satellites can predict cyclones and the rainfall with extreme accuracy. Communication satellites can help in conveying the messages to very long distances. In a huge country like India, communication satellites are necessary.

7. Radiation is also used for preparing the mutant seeds. Many varieties of rice and some cereals have been prepared at Tarapur laboratory. This will increase our agricultural production and help India to become economically better off. So for India it is necessary to make peaceful uses of nuclear energy.

I. On the basis of your reading of the passage, answer the following questions by choosing the most appropriate option.

(1x2=2 marks)

1. India needs nuclear energy in order to _____

- (a) gain status in the community of nations
- (b) meet her power shortage
- (c) increase her might
- (d) frighten the hostile countries

2. Coal, another source of energy, cannot be extracted commercially because _____

- (a) it lies very deep
- (b) the cost of extraction is very high
- (c) it lies very deep and the cost of extraction is very high
- (d) it is risky for the miners to extract it

II. Answer the following questions as briefly as possible.

(1x6=6 marks)

- 3. Why does India need nuclear energy?
- 4. How can radiation be helpful?
- 5. How does nuclear technology help in the field of medicine?
- 6. In what way can nuclear energy boost our communication?
- 7. How can nuclear energy help the country in its economic growth?
- 8. How can radiation help in the field of agriculture?

III. Find words from the passage which are similar in meaning to the following:

(2 marks)

- (a) withdraw (para 1)
- (b) extremely (para 6)

ANSWERS PASSAGE 1:

- A. (a) (i) Lack of media awareness
- (b)(ii) Fake
- (c)(i) Babysitter
- (d)(iii) Both teachers and parents

B. (a) Yes, it does. Most of the media experts and social scientists think that media violence on TV is responsible for actually promoting aggressiveness in children.

- (b) (i) The more violence children view on TV, the more aggressively behave with others.

(ii) They become less sensitive to the pain of others. Hence, they are less likely to help a victim of violence.

- (c) (i) Beating that the 12-year old Subin Kumar got from his WWF inspired friends.
(ii) The six year old child of Lucknow who leapt off the balcony of his second-floor flat trying to imitate a bungee jumping drop shown in a soft drink commercial.
- (d) Other factors are :
- (i) Individual predisposition of the child
 - (ii) Parental attitudes
 - (iii) Reaction to aggression
 - (iv) Intolerance
- (e) By providing media education and by teaching the children how to assess the reality status of TV programmes. Most parents and teachers have to understand their responsibility in imparting media education to children.
- (f) Children of this materialistic age are desirous of getting immediate gratification. It makes them impatient.

C.

- (a) Thrilling
- (b) Myriad

Answers Passage 2 :

- A. (a) (ii) The most important is possibly human labour
(b)(iv) no amount of foreign assistance or of natural wealth can ensure successful development and modernisation.
(c)(i) second class citizen
(d)(ii) nutritional status of the family
- B. (a) The manpower development during the next quarter century will come from the world's present population of infants, children and adolescents.
(b) The child grows maximum before he attains the age of five.
(c) The first teacher remains ineffective because of ignorance, poor health, lack of respect and recognition.
(d) There will be no growth and everything will stagnate.
(e) The rate of progress may be accelerated by educating the womenfolk.
(f) An educated mother does not beget children thoughtlessly but an illiterate mother considers children the blessings of god. Educated makes one wise and practical. Those who are uneducated fail to analyse the situation critically.
- C. (a) enhance
(b) significant

PASSAGE-1

Read the passage given below:

The construction of the Leaning Tower of Pisa began in August 1173.

It was interrupted several times by wars, debt and while engineers worked on solutions to correct the lean. We now know that without these interruptions that allowed the soil to compress under the tower, it would have certainly toppled over.

Pisa Tower was eventually completed in the mid-1300s.

The Tower of Pisa is the churches bell tower. The city of Pisa was at the beginning a simple but important Italian seaport. With its growth, so did its religious buildings.

Its fame and power grew gradually over the years, as the people of Pisa were involved in various military conflicts and trade agreements.

The Pisans attacked the city of Palermo on the island of Sicily in 1063. The attack was successful and the conquerors returned to Pisa with a great deal of treasure.

To show the world just how important the city was, the people of Pisa decided to build a great cathedral complex, the Field of Miracles. The plan included a cathedral, a baptistery, a bell tower (the Tower of Pisa) and a cemetery.

The real identity of Tower of Pisa's architects is a mystery.

The most accredited architects of this first phase of work are Bonanno Pisano and Gherardo din Gherardo.

The second phase of construction started in 1275, and the work is attributed to Giovanni di Simone. Tommaso Pisano (1350-1372) was the architect who finished the work.

The leaning of the Tower of Pisa comes into the story in 1173, when construction began.

Thanks to the soft ground, it had begun to lean by the time its builders got to the third story, in 1178. Shifting soil had destabilized the tower's foundations.

Over the next 800 years, it became clear the 55-metre tower wasn't just leaning but was actually falling at a rate of one to two millimeters per year.

Today, the Leaning Tower of Pisa is more than five meters off perpendicular.

Its architect and engineer tried to correct this by making the remaining stories shorter on the uphill side – but to no avail. It kept leaning more and more.

The lean, first noted when three of the tower's eight stories had been built, resulted from the foundation stones being laid on soft ground consisting of clay, fine sand and shells.

The next stories were built slightly taller on the short side of the tower in an attempt to compensate for the lean. However, the weight of the extra floors caused the edifice to sink further and lean more.

(a) On the basis of your reading of the passage above, make notes using points only, use abbreviations wherever necessary. Supply a suitable title.

PASSAGE 2

Read the passage given below:

A difference in opinions, values, attitudes and lifestyle among people of different ages is called 'generation gap'. Due to these differences, people belonging to different generations find themselves unable to relate to each other. This communication gap between successive generations is not a new phenomenon. The fight between the old and the young is not new and has been bound in the culture of every nation of the world. Parents and children across the world have been facing this problem. Due to fast-paced modern lifestyles, parents and children hardly find time together. The children, thus unable to express their thoughts and ideas to their parents, turn to friends for advice who are as inexperienced as they are. In the era of globalization and liberalization, the gap between the young the old reached its zenith.

Today's children are born into a competitive world and have a struggle to get everything. Many a time their true potential gets overshadowed in the rat race. Parents- burdened by the expectations of the society- end up forcing certain subjects and careers and lives that their parents have chosen for them, children are left lost and confused. Parents, on the other hand, feel that in this rapidly changing society where everyone is so self-centered, it is their duty to protect their children. Parents tend to feel that their children require guidance. This cannot be denied. But their constant monitoring makes children feel oppressed and they tend to turn rebellious.

Thus, generation gap is destroying the basic human relationship and is obviously a threat to the social stability of family relations. It is essential for parents to talk to their children and treat them as individuals. To be forever treated as child can be irritating and sometimes even humiliating. Children, in turn, must reciprocate with due respect and attention. Matters such as career, lifestyle and sensitive issues like freedom of choice of friends must be dealt with carefully and with maturity. Love and understanding are the best antidotes to this ever-widening generation gap. Only then will children look up to their parents and parents will not be burdened with their guilt of not being there for their children in their hour of need. In this way generation gap can at least be narrowed, if not completely filled.

- (a) On the basis of your reading of the passage above, make notes using points only, use abbreviations wherever necessary. Supply a suitable title.
- (b) Write a summary of the passage above in about 80 Words.

PASSAGE 3

Read the passage given below:

'Thoda' is martial art form of Himachal Pradesh, India relies on one's talent with the bow and arrow. The name 'Thoda' is derived from the round piece of wood fixed to the head of the arrow. Its history is traced back to the days of Mahabharata when bows and arrows were used in the epic battles between the Pandavas and the Kauravas while residing in the beautiful valleys of Kulu and Manali. Thus, this martial art has its origins in Kulu. The equipment required for this game are bows and arrows.

In Himachal Pradesh, in the olden days, the game of Thoda was organized in a very interesting way. A handful of village folks would go to another village and throw tree leaves into the village well before sunrise. They would then hide in the bushes nearby, just outside the village. As soon as the villagers came to draw water the youths would shout and challenge them for a fight.

Held on Baisakhi Day, the competition is a mixture of martial art, cultural event and sport. Community prayers are organized to invoke the blessings of the Gods. The archers are divided into teams called Saathi and Pashi. The archers in this game have to aim at the leg region, below the knee.

On reaching the village fairground, both the teams dance on either side of the ground. Both the opponents face each other at a distance of about 10 meters and prepare to attack. Very quick and easy movements are the only methods of defence. The whole competition is conducted to the lively rhythm of war dance with one side furiously sidestepping, legs kicking in all directions, and other side doing its best to place an arrow on the target. There are minus points for a strike on the wrong parts of the leg.

Presently, the game is played in a marked court, which ensures that a certain degree of discipline is maintained in Thoda -a happy blend of culture and sport.

- (a) On the basis of your reading of the passage above, make notes using points only, use abbreviations wherever necessary. Supply a suitable title.
- (b) Write a summary of the passage above in about 80 Words.

PASSAGE 4

Read the passage given below:

Is saving energy on your mind? Are you thinking about going green? Owing to rising awareness and consumer conscience, implementing green practices has gained popularity among several home owners. Going green essentially means indulging in practices that can lead to more environmentally friendly and ecologically responsible decisions and policies.

Energy costs are rising and we must use scarce resources in an optimal manner. It is not too late to adopt green measures when you renovate or improve your home. It may increase your budget by a small amount, but the returns are rewarding. Going green will benefit you and the environment as well.

There are several ways to adapt to a green lifestyle. Implementation of some simple measures can do away with high electricity and maintenance bills for good.

Use potted plants around the house. One well-placed plant could aid in cooling your house by almost 25 per cent.

Paint the walls of your home with a light colour .Dark colours tend to absorb light, requiring you to use more energy from light bulbs to achieve the same effect.

Replace standard incandescent bulbs with compact bulbs. They use 75 percent less energy than a regular bulb and generate little heat.

Cover all glass windows with a film to block heat and plant and help save power.

Turn off the water faucet while you brush your teeth and

Decrease your energy use significantly by replacing existing faucets and shower-heads with water saving low-flow alternatives.

Replace older toilets with water-efficient toilets to save water.

While buying new appliances, always look for their Energy Ratings. Keep the windows and ventilation outlets open. Use sunlight and stop the use of artificial light during day time. Fresh air is complimentary!

Seek professional help in determining the size of cooling equipment you need. Avoid over-sized units as they draw up more energy than necessary and cannot properly humidify.

When choosing your next washing machine, pick one with a front-loader. Front-loader models use 25 per cent less energy than a standard model. Further, use the washing machine only when you have a full load of clothes and not just 2-3 clothes. This way you save power and water.

Every time you open the refrigerator door, up to 30 per cent of the cold air can escape. Don't keep refrigerator door open unnecessarily and make sure all gaps are sealed to stop energy to escape from the refrigerator.

Vacuum the coils of your refrigerator every few months as it will help lower your electricity bill and also keep the condenser working better.

Allow warm foods to cool to room temperature before moving them to the refrigerator. That way energy won't be required to do work that can take place naturally.

Simply turning off appliances like hair dryers, mobile phone chargers and lamps isn't saving as much electricity as you could. To save the maximum amount of electricity, physically take the plug out of the socket.

Like every act of saving, energy saving also has to start at home. It is the first step towards achieving sustainability and demonstrating environment stewardship. If we can become energy efficient we would have achieved the first major step of becoming sustainable i.e. going green.

- (a) On the basis of your reading of the passage above, make notes using points only, use abbreviations wherever necessary. Supply a suitable title.
- (b) Write a summary of the passage above in about 80 Words.

Q.2 Read the following passages and do as instructed – (Do in the Writing Section of your notebook)

2.1 NOTICE –WRITING(4Marks.)

(i).You are Amita/ Anil the Physical Instructor of St. Mary's Convent, Bhopal. You have organized an excursion to Kathmandu (Nepal) during the Autumn Break for the senior students of your school. Write a notice in about 50 words informing the students about the proposed excursion.

(II) Jagat Taran School, Allahabad is organising a Career Counselling session for the students of class XI and XII of your school . Write a notice giving details of it to be displayed on your school notice board.
(Word limit-50 words.)

(iii)You are the Secretary of Akash Flats Welfare Association, Varanasi .Write a notice to be circulated to the members of the Association, requesting them to attend a meeting to discuss about the security measures of the flats and appointment of new security guards. (Word limit-50 words.)

(iv) You are Anita/Anil, the Sports Secretary of Jyoti Public School, Delhi. Draft a notice in not more than 50 words for your school notice board informing the students about the sale of old sports goods of your school.

(v) You are Babita/Biman the Secretary of the History Club of your school. Draft a notice in not more than 50 words informing the students of class IX and X about a proposed excursion to historical places of your city

2.2 POSTER-MAKING 4marks

(1)Design a poster in not more than 50 words for your school library on the value of books and good reading habits .You may use slogans.

(2) You are making an effort to spread message that Old Persons are an asset to society and they should be taken care of by the society. Prepare a poster to be displayed in the different parts of the city in not more than 50 words.

(3)Your company is launching a new range of lunch boxes &water bottles for children next month .Draft an attractive poster which can be displayed in all market areas of your town to promote their sale. Do not forget to mention the specialty of these lunch and water bottles.(Word limit 50 words)

(4) Design a poster in not more than 50 words for your school on the importance of Yoga and its relevance in our daily life. You may use slogans.

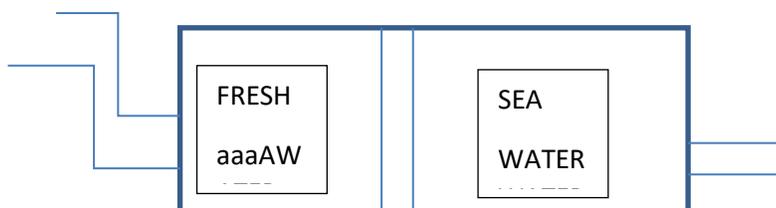
2.3 ADVERTISEMENT 4marks

1. You are a commerce graduate with 8 years' experience of keeping account. You want a job in some MNC/Corporate House. Prepare an advertisement to this effect.
2. You are Manager, Infocom Network C-3 Main shopping Centre, Vasant Vihar, New Delhi-110057. Draft an advertisement offering office furniture for sale. Give details.
3. As the Managing Director of a bureau providing tutors for home coaching write out an advertisement to be published in the classified columns of a newspaper.
4. An old man aged 68, poor vision, mentally upset has been missing for a week. Draft a suitable advertisement for the 'Missing Persons' column of a newspaper in about 50 words.
5. You have just started your own business but you have fallen short of money. Write an advertisement in about 50 words for the 'Business' column of a newspaper inviting a partner who can invest Rs 5,00,000.
6. Escort Shoes wish to announce their annual clearance before Diwali. Construct a suitable advertisement.

XII CLASS CHEMISTRY SUMMER VACATION ASSIGNMENT

SOLUTIONS

Q1.



SPM (PRESSURE $> \pi$)

- 1) Name the process occurring in the above plant.
- 2) To which container does the net flow of solvent take place?
- 3) Name the one SPM which can be used in this plant.
- 4) Give one practical use of plant.

Q2. The elevation in boiling point of 0.1 molal solution of X in water is 0.1536°C . what is the value of i ? ($K_b = 0.512 \text{ K Kg/mol}$)

Q3. In the determination of molar masses of A^+B^- using a colligative property, what will be the value of van'thoff factor if the solute is 50% dissociated?

Q4. A Certain mass of a substance is dissolved in 100 gm of benzene by 1.06°C the same mass of solute dissolved in 100 gm water lowers the freezing point by 1.15°C . If the substance have normal molecular weight in benzene and is completely dissociated in water, into how many ions does it dissociate in water K_f for water and benzene are 1.86 and $1.52 \text{ K Kg mol}^{-1}$ resp.

Q5. What mass of NaCl must be dissolved in 65g of water to lower the freezing point if water by 7.50°C ? (K_f for water is 1.86 K kg/mol) assume $I = 1.87$ for NaCl, molar mass of NaCl = 58.5 g .

Q 6. 15g of unknown molecular material was dissolved in 450 g of water. The resulting solution was found to freeze at -0.34°C . what is the molar mass of the material?

Q7 . An aqueous solution of 2% non-volatile exerts a pressure of 1.004 Bar at the normal boiling point of the solvent . What is the molar mass of the solute .

Q8 A 1.2% solution (wt/volume) of NaCl is isotonic with 7.2% solution(wt./volume) of glucose(molar mass=180).calculate the value of i . for NaCl solution.

ELECTROCHEMISTRY

Q 9 The standard reduction potential Values of three metal cations X, Y , Z are $+0.52, -3.02, -1.18 \text{ V}$ respectively. Arrange the corresponding metals in order of their increasing reducing power.

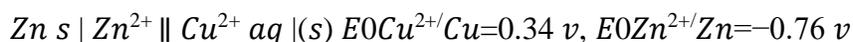
Q10 What is the role of ZnCl_2 in dry Cell ?

Q11 . Which solution will allow greater conductance of electricity, 1 M NaCl at 293 K or 1 M NaCl at 323 K and why ?

Q 12. How many grams of sodium will be deposited at cathode by passing 10 A current for 10 s through the electrolysis of NaCl.

Q 13 . The resistance of a conductivity cell containing 0.001 M KCl solution at 298 K is 1500Ω . What is the cell constant if conductivity of 0.001 M KCl solution at 298 K is $0.146 \times 10^{-3} \text{ S cm}^{-1}$.

Q 14 . Calculate maximum work done that can be obtained from the following cell under standard conditions at 25°C



Q15. Tarnished silver contains Ag₂S. Can this tarnish be removed by placing tarnished silver ware in an aluminium pan containing an inert electrolytic solution such as NaCl? The standard electrode potential for the half – reactions are:

For Ag₂S(s) + 2e⁻ ⇌ 2Ag(s) + S²⁻, it is -0.71V and

for Al³⁺ + 3e⁻ ⇌ Al(s), it is 1.66V.

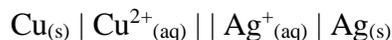
Q 16 10.07 gram of silver is deposited on passing 10 ampere electric current for 15 minutes through solution of AgNO₃. What will be the electro chemical equivalent of silver?

Q 17 When equal quantity of electric current is passed through copper sulphate and silver nitrate solution, 1.25 gram copper and 4.252 gram silver is deposited. If the equivalent mass of silver is 107.9, then calculate the equivalent mass of copper.

Q 18 The molar conductivities of NaI, CH₃COONa and (CH₃COO)₂ at 298 K are 12.69, 9.10 and 18.78 ohm⁻¹ cm² mole⁻¹ respectively. What will be the molar conductivity of MgI₂ at infinite dilution ?

Q 19 The specific conductivity of 0.01 M acetic acid at temperature 298K is 1.65 × 10⁻⁴ ohm⁻¹ cm² . If λ[∞](H⁺) = 349.1 and λ[∞](CH₃COO⁻) = 40.9 ohm⁻¹ mole⁻¹ cm² then calculate Molar conductivity of the solution.

Q 20 A cell is set up between copper and silver electrodes as follows:



If the two half cells work under standard conditions, calculate the EMF of the cell.

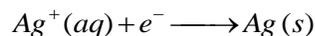
(Given $E_{\text{Cu}^{2+}/\text{Cu}}^0 = +0.34 \text{ V}$; $E_{\text{Ag}^{+}/\text{Ag}}^0 = +0.80 \text{ V}$)

Q 21 Calculate the value of electromotive force and free energy change at 298K for the following cell-



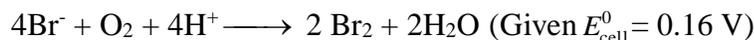
Given- $E_{\text{Zn}^{2+}/\text{Zn}}^0 = -0.761 \text{ volt}$, $E_{\text{Cu}^{2+}/\text{Cu}}^0 = +0.339 \text{ volt}$

Q 22 Calculate the reduction potential for the following half cell reaction at 298 K.



Given that [Ag⁺] = 0.1M and E⁰ = + 0.80 V

Q 23 Calculate the equilibrium constant for the cell reaction:



CHEMICAL KINETICS

Q24. A reaction is second order with respect to a reactant. How is the rate of reaction affected if the concentration of the reactant is (i) doubled (ii) reduced to half ?

Q25: For a reaction $A \rightarrow B$ the concentration of reactant decreases from 0.04 M to 0.03 M in 20 minutes. Calculate the average rate of the reaction.

Q26. In the reaction $A + 2B \rightarrow 3C$ rate of disappearance of A is $10^{-2} \text{ lit}^{-1} \text{ sec}^{-1}$. Calculate for the reaction- (i) Rate of disappearance of B. (ii) Rate of formation of C.

Q27. In the reaction $A + 2B \rightarrow 3C + 2D$, the rate of disappearance of B is $1 \times 10^{-2} \text{ mol L}^{-1} \text{ s}^{-1}$. What will be the rate of the reaction and rate of change in concentration of A and C?

Q28. The reaction $\text{N}_2\text{O}_5 \longrightarrow 2\text{NO}_2 + \frac{1}{2} \text{O}_2$ is of first order in N_2O_5 . Its rate constant is $6.2 \times 10^{-6} \text{ s}^{-1}$. If in the beginning $[\text{N}_2\text{O}_5]$ is 15 mol L^{-1} , calculate the rate of reaction in the beginning.

Q29. The rate of reaction; $2\text{NO} + \text{Cl}_2 \longrightarrow 2\text{NOCl}$ is doubled when concentration of Cl_2 is doubled and becomes eight times when concentration of both NO and Cl_2 are doubled. Determine the order of the reaction.

Q30: For a reaction $A \rightarrow B$ the rate of reaction becomes twenty seven times when the concentration of A is increased three times. What is the order of reaction?

Q31.: The rate of formation of a dimer in a second order dimerization reaction is $9.1 \times 10^{-6} \text{ mol L}^{-1} \text{ s}^{-1}$ at 0.01 mol L^{-1} monomer concentration. Calculate the rate constant for the reaction.

Q32: In a first order reaction initial concentration is half (0.5) after 50 seconds. Calculate rate constant.

Q33.: A first order reaction taken 20 minutes for 90% completion. Calculate the rate constant for this reaction.

Q34. For first order reaction 40% of reaction completes in 50 minutes. Calculate the rate constant in hours^{-1} .

Q.35 Ethylene glycol (molar mass = 62 gmol^{-1}) is a common automobiles antifreeze. Calculate the freezing point of a solution containing 12.4g of this substance in 100g of water would it be advisable to keep this substance in the car radiator during summer?

Given : K_f for water = 1.86 K Kg/mol

: K_b for water = 0.512 K Kg/mol

Q.36 Give reasons for the following :

(a): At higher altitude, people suffer from a disease called anoxia. In this disease, they become weak and cannot think clearly.

(b): when mercuric iodide is added to an aqueous solution of KI, the freezing point is raised.

(c) To get the hard boiled eggs, why common salt is added to water before boiling the eggs?

Q 37 (B). rate of reaction is given by the equation

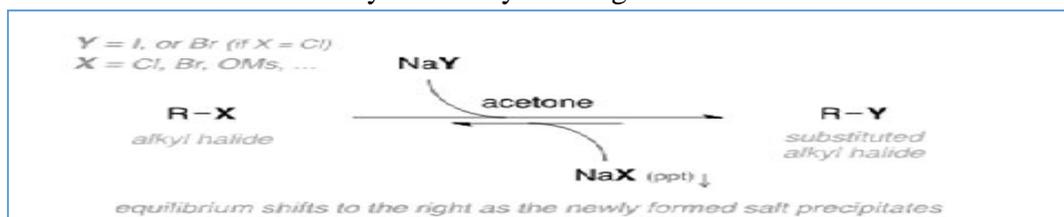
$$\text{Rate} = k[A]^2[B]$$

What are the units of rate of constant for this reaction.

Q38. The rate constant for first order reaction is 60 /s. how much time will it take to reduce the concentration of the reaction to 1/10 of its initial value.

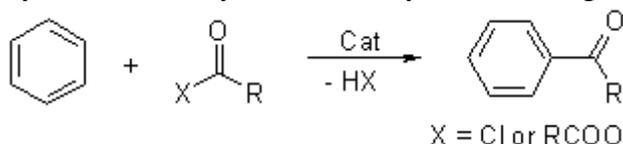
Q.39 Learn the following organic reactions:

1. **Finkelstein reaction**- The Finkelstein reaction is an organic reaction where an alkyl halide is converted into another alkyl halide by reacting with a metal halide salt.



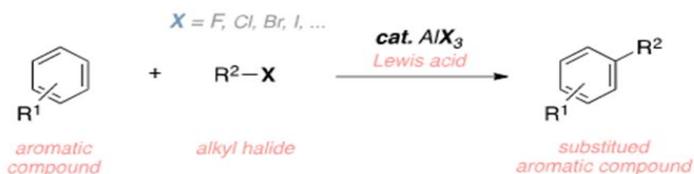
2. Friedel-Crafts acylation

The Friedel-Crafts acylation is an organic reaction used to convert an aryl compound and an acyl halide or anhydride to an aryl ketone using a Lewis acid catalyst (such as $AlCl_3$).



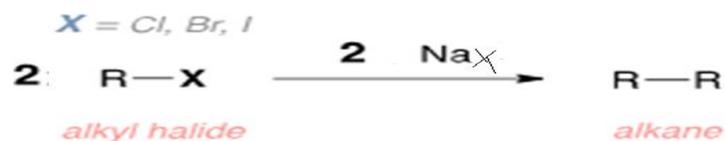
3. Friedel-Crafts alkylation

The Friedel-Crafts alkylation is an organic reaction used to convert an aryl compound and an alkyl halide to a substituted aromatic compound using a Lewis acid catalyst (such as $AlCl_3$).



4. Wurtz reaction

The Wurtz reaction is an organic reaction used to couple two alkyl halides to form an alkane using sodium metal.



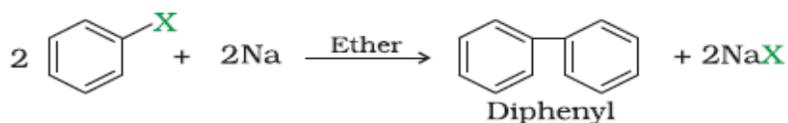
5. WurtzFittig Reaction



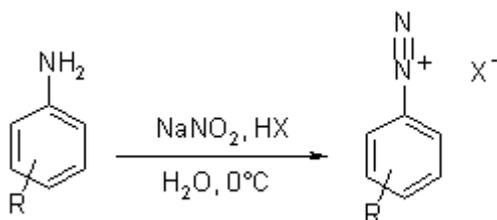
A mixture of an alkyl halide and aryl halide gives an alkylarene when treated with sodium in dry ether and is called Wurtz-Fittig reaction.

6. Fittig Reaction

Aryl halides also give analogous compounds when treated with sodium in dry ether, in which two aryl groups are joined together. It is called Fittig reaction.



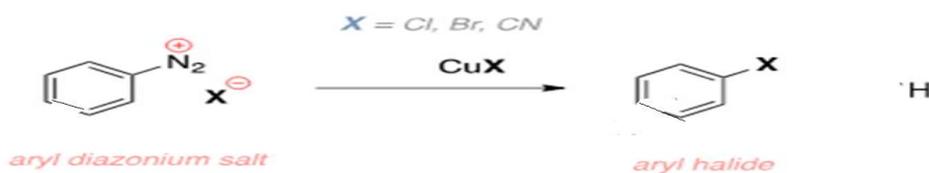
7. Diazotisation



The nitrosation of primary aromatic amines with nitrous acid (generated in situ from [sodium nitrite](#) and a strong acid, such as hydrochloric acid, sulfuric acid, or HBF_4) leads to diazonium salts, which can be isolated if the counterion is non-nucleophilic.

8. Sandmeyer reaction The Sandmeyer reaction is an organic reaction used to convert an aryl diazonium salt to an aryl halide

using a copper(I) halide catalyst and yield the final aryl halide product.



ANSWERS

2. i=3

3. i=1.5

4. 3

5. 8.2g

6. 182.35g/mol

8. 1.95

12. 0.024 g sodium (approx)

13. 0.219 S cm^{-1}
14. -212.3 KJ
16. 0.0001118
17. 31.7
18. $25.96 \text{ ohm}^{-1} \text{ cm}^2 \text{ mole}^{-1}$.
19. $1.65 \text{ ohm}^{-1} \text{ cm}^2 \text{ mole}^{-1}$
20. 0.46 volt
21. -212.3 K joule
22. 0.741 V
23. 6.76×10^{10}
25. $0.5 \times 10^{-3} \text{ mol litre}^{-1} \text{ minute}^{-1}$
26. $3 \times 10^{-2} \text{ mol litre}^{-1} \text{ minute}^{-1}$
27. $0.5 \times 10^{-2} \text{ mol litre}^{-1} \text{ s}^{-1}$, $1.5 \times 10^{-2} \text{ mol litre}^{-1} \text{ s}^{-1}$
28. $9.3 \times 10^{-5} \text{ mol L}^{-1} \text{ s}^{-1}$
29. $x=2$, $y=2$
30. $n=3$
31. $9.1 \times 10^{-2} \text{ L mol}^{-1} \text{ s}^{-1}$
32. $1.38 \times 10^{-2} \text{ s}^{-1}$
33. 0.1151 min^{-1}
34. 0.612 hr^{-1}
35. 1.024 K
37. $\text{mol}^{-2} \text{ L}^2 \text{ s}^{-1}$
38. $3.38 \times 10^{-2} \text{ s}^{-1}$

Note: Do the practical questions in practical book of computer Science

Class :XII

Sub: Computer Science

Q1) WAP in python to count the number of elements in list

Q2) WAP in python to find average of numbers of list

Q3) WAP in python to search number in list

Q4) . Give the output of the following code:-

```
list=['p','r','o','b','l','e','m']
```

```
list[1:3]=[]
```

```
print(list)
```

```
list[2:5]=[]
```

```
print(list)
```

Q5. Give the output of the following code:-

```
l1=[13,18,11,16,13,18,13]
```

```
print(l1.index(18))
```

```
print(l1.count(18))
```

```
l1.append(l1.count(13))
```

```
print(l1)
```

Q6. WAP in python to create a list of natural numbers from 1 to 50 using for loop.

Q7. WAP in python to take two lists of same size and create a third list of same size with adding elements at the same location of 1st & 2nd list. E.g. if A=[1,2,3], B= [4,5,6], then C[5,7,9].

Q8. WAP in Python to accept any ten numbers from the user in a list and display the maximum number along with its position.

Q9. WAP in Python to calculate & display the factorial of all elements of an integer list.

Q10. Predict the output of the following code in python:

```
T1=(1,)*3
```

```
T1[0]=2
```

```
Print(T1)
```

Q11. Predict the output of the following code in python:

```
TupleA='m','n'
```

```
TupleB=('m','n')
```

```
Print(TupleA==TupleB)
```

Q12) Prepare Notes on Society Ethics and Law

Q13)

Write a SQL command to create the following emp table.

Name	Type
-----	-----
--	-----
EMPNO	INTEGER
ENAME	VARCHAR(10)
JOB	VARCHAR(9)
MGR	INTEGER
	DAT
HIREDATE	E
SAL	DECIMAL(7,2)
COMM	DECIMAL(7,2)
DEPTNO	INTEGER

Insert the following data into the table.

Table EMP

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7876	SMITH	ANALYST	7782	12-Aug-2010	9600		20
7499	ALLEN	CLERK	7876	1-Apr-2005	19200		30
7698	WARD	MANAGER	7900	2-Jul-2001	15000		30
7782	JONES	PRESIDENT		21-Sep-2006	95700		10
7902	MARTIN	SALESMAN	7900	5-Jun-2009	15000	20	20
7900	BLAKE	ANALYST	7782	18-Jul-2009	34200		30
7566	CLARK	ANALYST	7782	22-May-2007	29400		20
7839	SCOTT	CLERK	7876	6-Mar-2005	36000		10
7654	KING	MANAGER	7900	19-Apr-2003	60000		30
7934	TURNER	CLERK	7876	30-Nov-2004	18000		10
7788	ADAMS	ANALYST	7782	13-Mar-2007	13200		20
7369	JAMES	CLERK	7876	18-Feb-2005	11400		20
7844	FORD	MANAGER	7900	12-Jan-2007	36000		30

					0	
7521	MILLER	CLERK	7876	22-Sep-2008	1560 0	30

Deptno	Dname	LOC
10	HR	New Jersey
20	Sales	New Delhi
30	Production	New York

1. Write a statement to show the structure of the table emp.
2. To create a table DEPT30 to hold the all information of employees with deptno 30
3. Display names of all employee whose name include either of the substring 'TH' or 'LL'
4. Display data for all CLERKS who earn between 1000 and 2000;
5. Find the employees who have no manager.
6. Display the name of the employee who earns the maximum salary.
7. Write a SQL statement to list empno, empname, deptno for all the employees. The information should be sorted on empname;
8. List the minimum and maximum salary for each employee.
9. Display the name of the employee who earns the maximum salary.
10. To display deptno, job, empname in reverse order of salary from emp.
11. Show the average salary for all departments with more than 3 people for a job.
12. Create a view deptno20 with empname and salary of employees for dept 20
13. Write a SQL statement to find out the total number of employees from emp table.
14. Write a suitable sql statement to display employees name, salary and location of all the employees working in new york in the following format
15. Display name and annual salary for all employee.
16. Count no of employee working in each department.
17. Display names of all employee whose name is at least 4 characters long;
18. Display the current system date.
19. display the current system time;
20. Write a SQL query to increase the salary of each employee by 200.
21. Display the total salary of all employees
22. display the different job from emp table;
23. Display the names and no of characters in each name
24. Display ename in lower case and job in upper case

Q14. WAP in Python to create a phone dictionary for your ten friends and then print them in format:name of friend : mobile number

Q15. Predict the output of the following code in python:

```
Fruit ={ }
```

```
L=['Orange','Apple','Grapes']
```

```
For index in L:
```

```
    If index in Fruit:
```

```
        Fruit[index]+=1
```

```
    else:
```

```
        Fruit[index]=1
```

```
print(len(Fruit))
```

```
print(Fruit)
```

XII BIOLOGY SUMMER VACATION HOME WORK

ASSIGNMENT -3

HUMAN REPRODUCTION

- Q1 At what stage of life oogenesis is initiated?
- Q2 Name the cells that secrete androgens.
- Q3 what does the sperm head consists of ?
- Q4 Name the structure that secrete progesteron.
- Q5 name the structure that secretes estrogen.
- Q6 name the site of fertilization in human female.
- Q7 Name the outer most layer of blastocyst.
- Q8 What promotes the completion of second meiotic division in oogenesis.
- Q9 How many spermatozoa will be produced from 100 primary spermatocytes and how many ova will be produced from 100 primary oocyte?
- Q10 Where is fimbriae located? Give its function.
- Q11.What is an antrum?
- Q12 When and where does spermatogenesis occur in males?
- Q13 Name the three layers of embryo that give rise to all tissues and also name the cells which have the potency to give rise to all the tissues and organs.
- Q14 What is clostrum and its importance?
- Q15 Draw a diagram of blastocyst and label it.
- Q16. Differentiate between Leydig cells and sertoli cells with reference to location and function?
- Q17 Differentiate between morula and blastocyst.
- Q18 What is the role of acrosome and mitochondria in human sperm?
- Q19 Differentiate between secondary and tertiary follicle.
- Q20 Mention any two difference between follicular and luteal phase.
- Q21 What is LH surge?Explain.
- Q22 Draw a diagram of ovum .
- Q23 name the two membranes that surround an ovum.
- Q24In which part of female reproductive system do the following occur-
- a) Release of 1st polar body b) Release of 2nd polar body c) Implantation

HOTS

Q25 Name the muscular and glandular layer of uterus. Which one of these layers undergo cyclic changes during menstrual cycle. Name the hormone essential for its maintenance.

HOTS

Q26 Name the organs/ structures formed after one, two,three, five and six month in an embryo.

HOTS

Q27 From where do the signals for parturition originate and what does maternal pituitary release for stimulating uterine contraction of child birth?

HOTS

Q28 Name the hormones produced by placenta.

Q29 Name the hormones that are produced only during pregnancy.

Q30 Name the hormones whose level increase many fold during pregnancy.

HOTS

ASSIGNMENT-4
REPRODUCTIVE HEALTH

- Q1 Name the technique used to know the genetic disorders in the foetus.
- Q2 What is MTP and when was it legalized?
- Q3 Write any four features of an ideal contraceptive.
- Q4 What is the full form of RCH and its aim ?
- Q5 What is lactational amenorrhea?
- Q6 one drawback of surgical method of birth control.
- Q7 Which period of pregnancy is safe for MTP?
- Q8 What are the measures one has to prevent from contracting STDs?
- Q9 Describe the three different practices under natural methods of birth control.
- Q10 Name the different barrier methods of birth control.
- Q11 What is the composition of oral pills?
- Q12 What is special about the contraceptive Saheli?
- Q13 Where are implants?
- Q14 What can be the complications in a woman suffering from STDs if not cured timely?
- Q15 What are ectopic pregnancies?
- Q16 Differentiate between ZIFT and GIFT?
- Q17 Name three STDs which are not curable.
- Q18 Name the hormone releasing IUDs.
- Q19 Expand the terms RCH, ZIFT, GIFT, IUI, AI, ART, ICSI, etc and IVF.
- Q20 Name the condoms used by females.
- Q21 What is tubectomy?
- Q22 to which group do the following contraceptives belong to-

spermicidal creams. multiload 375, saheli, diaphragms, lippes loop

Q23 what is the mode of action of HORMONE RELEASING HORMONES?

Q24 Name a non steroidal oral contraceptive used by females.

Q25 What are the reasons of population explosion?

ग्रीष्मकालीन गृहकार्य (२०१९_२०)

कक्षा -१२ (हिंदी आधार)

१) सीबीएसई के पाठ्यक्रमानुसार किसी भी पांच अपठित गद्यांश एवं अपठित काव्यांश का अभ्यास करे तथा कक्षा कॉपी में संलग्न करे ।

२)हिंदी परियोजना कार्य फाइल में तैयार करे ।

३)वितान भाग -२ के चारो पाठ पढ़े एवं संक्षेप में सार लिखे ।

४)विद्यालय पत्रिका के लिए संस्मरण ,साक्षात्कार ,कहानी ,कविता , अथवा नाटक में से किसी एक विधा पर मौलिक रचना लिखे ।

५)निम्नलिखित विषय पर लगभग २००-२५० शब्दों में निबंध लिखे ।

* ज्ञान को सीमित करता इंटरनेट ।

* दस वर्ष बाद दोस्त से मिलना ।