

THE SD VIDYA SCHOOL,NOIDA
SUMMER HOLIDAY HOMEWORK (2022-23)
CLASS XII-A

Dear students,

“Self- belief and hard work will always earn you success.”

Vacations are the best time to have fun. It is the best time to get yourself involved in new things and develop new skills. It is the time that we all eagerly wait for. But it is important to maintain a balance between studies and recreation as during holidays you can plan and take a lead over competition and achieve success. All successes begin with self-discipline. It starts with you. If you are disciplined with your daily actions you can achieve anything that you set in your mind.

KEEP IN MIND TO:

- Pray to the Almighty daily and thank Him for the blissful life that you enjoy.
- Identify where you can improve; determine what motivates you; Minimize distractions; Create daily plans and goals; Turn these steps into habits.
- Give prime importance to your health. Fuel your body by eating a healthy, well- balanced diet and drink plenty of water. Take deep breaths and stretch often.
- Set and maintain a routine at home. Be a good time manager.
- Practice positive thinking and be grateful for what we have.
- Relax yourself, listen to music or read books.
- Be a helping hand to your parents and learn the skill of shared responsibility.

MOST IMPORTANT:

- Make sure that all the syllabus done till May is revised thoroughly.
- Complete the assignments.

REMEMBER:

“THE FUTURE BELONGS TO THE COMPETENT.GET GOOD, GET BETTER, BE THE BEST!”

Wishing all the students a joyful learning and Happy Holidays.

ENGLISH

Assignment 1:

Topic: Critical Appreciation – Roadside Stand – by Robert Frost

1. Make a Project File defining and illustrating the critical appreciation of the poem Roadside Stand by Robert Frost (Flamingo)
 1. Title of project
 2. Certificate
 3. Acknowledgement
 4. Index
 5. Introduction to the topic
 6. Elucidate the plight of the rural people (farmers) as depicted by Frost in the poem - Creatively
 7. Compare and Contrast the lives of the farmers in rural and urban areas
 8. Elaborate the last stanza, explaining why does the poet state so
 9. Show Creativity if any
 10. Bibliography / References

Assignment 2 : to be done on the ruled sheets and attached at the back in the same file.

1. As Secretary of the Literary Club of St. Anne's School, Ahmedabad, draft a formal invitation in not more than 50 words for the inauguration of the club in your school.
2. As the principal of a reputed college, you have been invited to inaugurate a Book Exhibition in your neighbourhood. Draft a reply to the invitation in not more than 50 words, expressing your inability to attend the function. You are Tarun/Tanvi.
3. You want to sell your newly built flat. Draft a suitable advertisement in not more than 50 words to be inserted in the classified columns of 'The Hindu' giving all necessary details. You are Niranjana, 247, J.P. Nagar, Bengaluru.
4. Your younger brother aged 5 has been missing for the last three days. Draft an advertisement in not more than 50 words for the Missing Persons column of a local newspaper. You are Ram/Rama. Contact number 931070000.
5. You are Uttarak/Umesh, a visually challenged person, running a telephone booth in the Central Market, Delhi. Give a suitable advertisement in not more than 50 words for a telephone operator in 'Situation Vacant' column of Delhi Times, offering attractive remuneration.

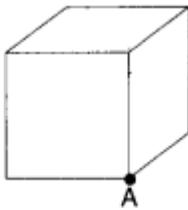
PHYSICS

Make a power point presentation on the topic telescope

Complete the given assignment in your note book.

ASSIGNMENT- 1 Electric Charges and Fields

- The surface considered for Gauss's law is called
 - Closed surface
 - Spherical surface
 - Gaussian surface
 - Plane surface
- The total flux through the faces of the cube with side of length a if a charge q is placed at corner A of the cube is



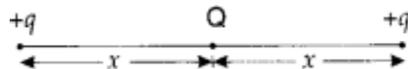
(a) $\frac{q}{8\epsilon_0}$

(b) $\frac{q}{4\epsilon_0}$

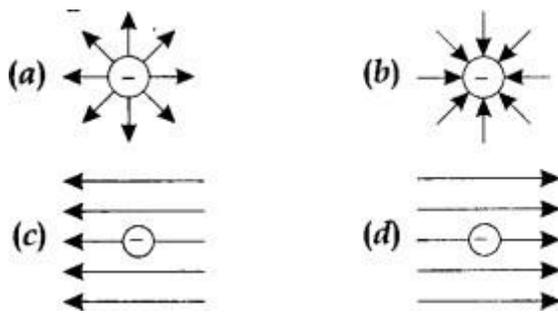
(c) $\frac{q}{2\epsilon_0}$

(d) $\frac{q}{\epsilon_0}$

- Which of the following statements is not true about Gauss's law?
 - Gauss's law is true for any closed surface.
 - The term q on the right side of Gauss's law includes the sum of all charges enclosed by the surface.
 - Gauss's law is not much useful in calculating electrostatic field when the system has some symmetry.
 - Gauss's law is based on the inverse square dependence on distance contained in the coulomb's law
- A charge Q is placed at the centre of the line joining two point charges $+q$ and $+q$ as shown in the figure. The ratio of charges Q and q is



- 4
 - 1/4
 - 4
 - 1/4
- Electric field lines provide information about
 - field strength
 - direction
 - nature of charge
 - all of these
 - Which of the following figures represent the electric field lines due to a single negative charge?



7. The SI unit of electric flux is
- $\text{N C}^{-1} \text{m}^{-2}$
 - N C m^{-2}
 - $\text{N C}^{-2} \text{m}^2$
 - $\text{N C}^{-1} \text{m}^2$
8. The unit of electric dipole moment is
- newton
 - coulomb
 - farad
 - debye
9. Consider a region inside which, there are various types of charges but the total charge is zero. At points outside the region
- the electric field is necessarily zero.
 - the electric field is due to the dipole moment of the charge distribution only.
 - the dominant electric field is inversely proportional to r^3 , for large r (distance from origin).
 - the work done to move a charged particle along a closed path, away from the region will not be zero.
10. SI unit of permittivity of free space is
- Farad
 - Weber
 - $\text{C}^2\text{N}^{-1} \text{m}^{-2}$
 - $\text{C}^2\text{N}^{-1} \text{m}^{-2}$

ASSIGNMENT- 2

Electrostatic Potential and Capacitance

- Which of the following statement is true?
 - Electrostatic force is a conservative force.
 - Potential at a point is the work done per unit charge in bringing a charge from any point to infinity.
 - Electrostatic force is non-conservative
 - Potential is the product of charge and work.
- 1 volt is equivalent to

(a) $\frac{\text{newton}}{\text{second}}$	(b) $\frac{\text{newton}}{\text{coulomb}}$
(c) $\frac{\text{joule}}{\text{coulomb}}$	(d) $\frac{\text{joule}}{\text{second}}$
- The work done in bringing a unit positive charge from infinite distance to a point at distance x from a positive charge Q is W . Then the potential at that point is

(a) $\frac{WQ}{x}$	(b) W
(c) $\frac{W}{x}$	(d) WQ

4. Consider a uniform electric field in the z-direction. The potential is a constant
 - (a) for any x for a given z
 - (b) for any y for a given z
 - (c) on the x-y plane for a given z
 - (d) all of these
5. Equipotential surfaces
 - (a) are closer in regions of large electric fields compared to regions of lower electric fields.
 - (b) will be more crowded near sharp edges of a conductor.
 - (c) will always be equally spaced.
 - (d) both (a) and (b) are correct.
6. In a region of constant potential
 - (a) the electric field is uniform.
 - (b) the electric field is zero.
 - (c) there can be no charge inside the region.
 - (d) both (b) and (c) are correct.
7. A test charge is moved from lower potential point to a higher potential point. The potential energy of test charge will
 - (a) remain the same
 - (b) increase
 - (c) decrease
 - (d) become zero
8. An electric dipole of moment $p \rightarrow$ is placed in a uniform electric field $E \rightarrow$. Then
 - (i) the torque on the dipole is $p \rightarrow \times E \rightarrow$
 - (ii) the potential energy of the system is $p \rightarrow \cdot E \rightarrow$
 - (iii) the resultant force on the dipole is zero. Choose the correct option.
 - (a) (i), (ii) and (iii) are correct
 - (b) (i) and (iii) are correct and (ii) is wrong
 - (c) only (i) is correct
 - (d) (i) and (ii) are correct and (iii) is wrong
9. If a conductor has a potential $V \neq 0$ and there are no charges anywhere else outside, then
 - (a) there must be charges on the surface or inside itself.
 - (b) there cannot be any charge in the body of the conductor.
 - (c) there must be charges only on the surface.
 - (d) both (a) and (b) are correct.
10. A capacitor has some dielectric between its plates, and the capacitor is connected to a dc source. The battery is now disconnected and then the dielectric is removed, then
 - (a) capacitance will increase.
 - (b) energy stored will decrease.
 - (c) electric field will increase.
 - (d) voltage will decrease.
11. Dielectric constant for a metal is
 - (a) zero
 - (b) infinite
 - (c) 1
 - (d) 10
12. When air is replaced by a dielectric medium of constant K, the maximum force of

attraction between two charges separated by a distance

- (a) increases K times
- (b) remains unchanged
- (c) decreases K times
- (d) increases K^{-1} times

13. In a parallel plate capacitor, the capacity increases if
- (a) area of the plate is decreased.
 - (b) distance between the plates increases.
 - (c) area of the plate is increased.
 - (d) dielectric constant decreases.
14. A parallel plate air capacitor is charged to a potential difference of V volts. After disconnecting the charging battery the distance between the plates of the capacitor is increased using an insulating handle. As a result the potential difference between the plates
- (a) increases
 - (b) decreases
 - (c) does not change
 - (d) becomes zero
15. Two identical capacitors are joined in parallel, charged to a potential V , separated and then connected in series; the positive plate of one is connected to the negative of the other. Which of the following is true?
- (a) The charges on the free plates connected together are destroyed.
 - (b) The energy stored in the system increases.
 - (c) The potential difference between the free plates is $2V$.
 - (d) The potential difference remains constant.

CHEMISTRY

Make a power point presentation on the topic as allocated in the class.

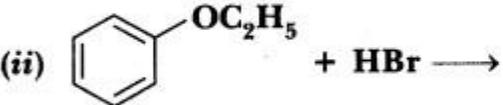
Make an investigatory project on any topic of your choice as per the guidelines of CBSE.

Complete the given assignments in your note book

ASSIGNMENT - 1

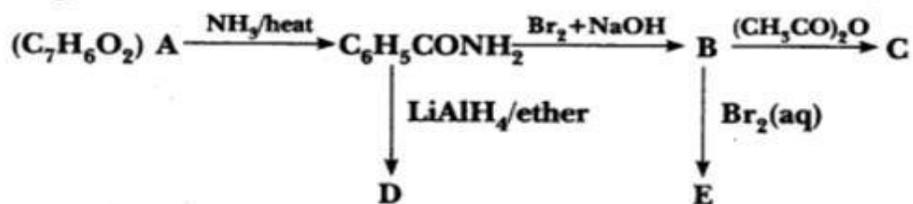
ALCOHOLS, PHENOLS AND ETHERS

- Give reasons for the following:
 - p-nitrophenol is more acidic than p-methylphenol.
 - Bond length of C—O bond in phenol is shorter than that in methanol.
 - (CH₃)₃C—Br on reaction with sodium methoxide (Na+ ₂OCH₃) gives alkene as the main product and not an ether.
 - The C—O—H bond angle in alcohols is slightly less than the tetrahedral angle (109°28').
 - (CH₃)₃C—O—CH₃ on reaction with HI gives (CH₃)₃C—I and CH₃—OH as the main products and not (CH₃)₃C—OH and CH₃—I
- How do you convert the following:
 - Aniline to phenol
 - Prop-1-ene to Propan-1-ol
 - Anisole to 2-methoxytoluene
- Predict the products of the following reaction:
 - $$\text{CH}_3\text{—CH=CH}_2 \xrightarrow[\text{(ii) } 3\text{H}_2\text{O}_2/\text{OH}^-]{\text{(i) B}_2\text{H}_6} ?$$
 - $$\text{C}_6\text{H}_5\text{—OH} \xrightarrow{\text{Br}_2(\text{aq})} ?$$
 - $$\text{CH}_3\text{CH}_2\text{OH} \xrightarrow{\text{Cu}/573\text{ K}} ?$$
- Give reasons:
 - Aniline does not undergo Friedel-Crafts reaction.
 - p-methylaniline is more basic than p-nitroaniline.
 - Acetylation of —NH₂ group is done in aniline before preparing its ortho and para compounds.
 - Meta derivatives are formed on nitration of aniline.
- Give chemical test to distinguish between the following pairs of compound :
 - Ethanol and phenol
 - Methanol and Propan-2-ol.
- Name the reagents used in the following reactions:
 - Nitration of phenol to 2, 4, 6-trinitrophenol
 - Butanal to Butanol .
 - Friedel – Crafts acetylation of anisole
 - Oxidation of primary alcohol to aldehyde

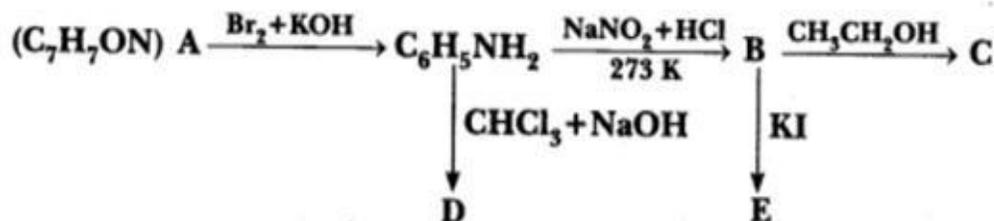
- 7 Rearrange the following compounds in the increasing order of their boiling points:
 $\text{CH}_3\text{—CHO}$, $\text{CH}_3\text{—CH}_2\text{—OH}$, $\text{CH}_3\text{—CH}_2\text{—CH}_3$
 Arrange the following compounds in the increasing order of their acid strengths:
 4-Nitrophenol, Phenol, 2,4,6-Trinitrophenol
- 8 Write the equations involved in the following reactions:
 (i) Reimer-Tiemann reaction
 (ii) Williamson's ether synthesis.
- 9 State the products of the following reactions:
 (i) $\text{CH}_3\text{—CH}_2\text{—CH}_2\text{—O—CH}_3 + \text{HBr} \longrightarrow$
 (ii)  + $\text{HBr} \longrightarrow$
 (iii) $(\text{CH}_3)_3\text{C—OC}_2\text{H}_5 \xrightarrow{\text{HI}}$
- 10 How would you obtain
 (i) Picric acid (2, 4, 6-trinitrophenol) from phenol
 (ii) 2-Methylpropene from 2-methylpropanol?

ASSIGNMENT - 2 AMINES

1. An aromatic compound 'A' of molecular formula $\text{C}_7\text{H}_6\text{O}_2$ undergoes a series of reactions as shown below. Write the structures of A, B, C, D and E in the following reactions:

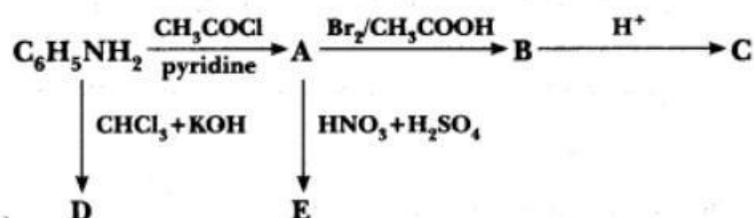


2. An aromatic compound 'A' of molecular formula $\text{C}_7\text{H}_7\text{ON}$ undergoes a series of reactions as shown below. Write the structures of A, B, C, D and E in the following reactions:



3. Write the chemical equations involved when aniline is treated with the following reagents:
- Br_2 water
 - $\text{CHCl}_3 + \text{KOH}$
 - HCl .
4. Give reasons:
- Aniline does not undergo Friedel-Crafts reaction.
 - p methylaniline is more basic than p nitroaniline.
 - Acetylation of $-\text{NH}_2$ group is done in aniline before preparing its ortho and para compounds.
 - Meta derivatives are formed on nitration of aniline.

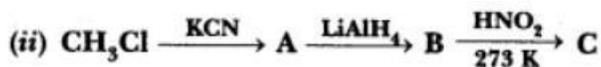
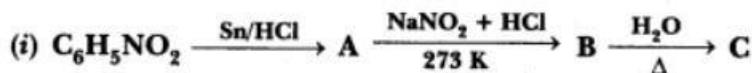
5. Write the structure of A, B, C, D and E in the following reaction.



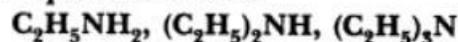
- 6 (a) Write the structures of main products when benzene diazonium chloride ($\text{C}_6\text{H}_5\text{N}_2^+\text{Cl}^-$) reacts with the following reagents:

- HBF_4/Δ
- Cu/HBr

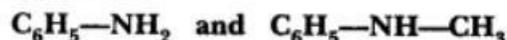
- (b) Write the structures of A, B and C in the following reactions:



- 7 Arrange the following in the increasing order of their basic character in an aqueous solution:



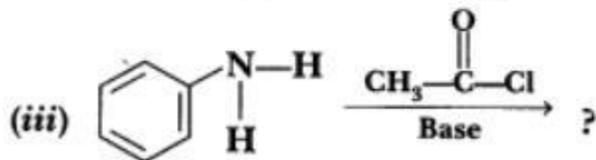
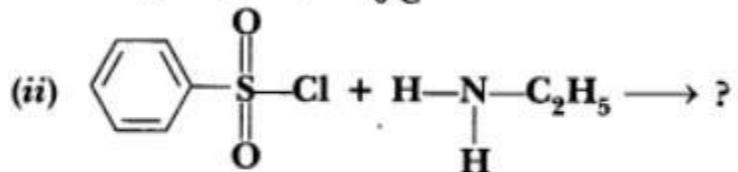
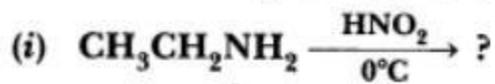
Give a simple chemical test to distinguish between the following pair of compounds:



- 8 How do you convert the following?

- $\text{C}_6\text{H}_5\text{CONH}_2$ to $\text{C}_6\text{H}_5\text{NH}_2$
- Aniline to phenol
- Ethanenitrile to ethanamine.

9 Write the main products of the following reactions:



10 Account for the following:

- pK_b value for aniline is more than that for methylamine
- Ethylamine is soluble in water whereas aniline is not soluble in water,
- Primary amines have higher boiling points than tertiary amines

BIOLOGY

Make an investigatory project on any topic of your choice as per the guidelines of CBSE.

Complete the given assignments in your note book

ASSIGNMENT- 1 Principles of Inheritance and Variation

1. Why do sons of a haemophilic father never suffer from this trait?
2. Give any two similarities between the behaviour of genes during inheritance and of chromosomes during cell division.
3. What is co-dominance? State one example in humans.
4. A woman of 47 years delivered an abnormal child with flattened nasal bridge and mouth usually open with a large protruding tongue Name this genetic abnormality. What causes this condition?
5. A colourblind man marries a woman with normal vision, whose father was colour blind. Work out a cross to show the genotype of the new couple and their prospective sons.
6. Mention the advantages of selecting a pea plant for experiment by Mendel.
7. When a cross is made between tall plants with yellow seeds (TtYy) and tall plant with green seeds (Ttyy) what proportions of the phenotype in the offspring could be expected to be:
(a) tall and green
(b) dwarf and green
8. Two heterozygous parents are crossed. If the two loci are linked what would be the distribution of phenotypic features in F₂ generation for a dihybrid cross?
9. What is pedigree analysis? Suggest how such an analysis can be useful?
10. Give the Mendelian monohybrid ratio. How is it mathematically condensable to binomial expression?
11. What are multiple alleles? Give an example.
12. Write four characteristic symptoms shown by a Turner's syndrome.
13. A man with AB blood group marries a woman with O group blood.
(i) Work out the possible phenotypes and genotypes of the progeny.
(ii) Discuss the kind of dominance in the parents and progeny in this case.
14. A red-eyed heterozygous female fruit fly is crossed with a red-eyed male work out all the possible genotypes and phenotypes of the progeny comment on the pattern of inheritance of eye colour in fruit flies.
15. In humans, sex of the child is determined by father and not by the mother. How?
16. Explain the phenomenon of multiple allelism and codominance by taking the example of ABO blood group in human beings.
17. Why did Mendel's work remain unrecognized from 1865 to 1900? Who rediscovered Mendel's work?
18. Describe sex determination in birds.
19. What is the cause of phenylketonuria? Explain the disorder.
20. Mention three similarities between Mendelian factors (genes of today) and chromosomes.

21. A cross between normal couple resulted in a son who was haemophilic and a normal daughter. In course of time, when the daughter was married to a normal man. To their surprise, the grandson was also haemophilic.
 - i) Represent this cross in the form of a pedigree chart. Give the genotype of the daughter and her husband.
 - ii) Write the conclusion drawn from the inheritance pattern of this disease.
22. Work out a dihybrid cross between homozygous tall Pisum sativum plant bearing round seeds and a dwarf plant with wrinkled seeds through 2 generations using punnet square. Give the dihybrid phenotypic ratio.
23. A dihybrid heterozygous round, yellow seeded garden pea was crossed with a double recessive plant.
 - (i) What type of cross is this?
 - (ii) Work out the genotype and phenotype of the progeny.
 - (iii) What principle of Mendel is illustrated through the result of this cross?
24. How are genetic disorders broadly classified? Explain with two examples for each.
25. In the case of Snapdragon a plant with red flowers was crossed with another plant with white flowers. Trace the inheritance of flower colour up to the F₂ generation indicating the genotypes and phenotypes at each level. What special feature do you notice in the genotypic and phenotypic ratios in the F₂ generations?

ASSIGNMENT- 2

Principles of Inheritance and Variation

1. When 'Aa' is crossed with 'aa', (A is dominant over a)
 - (a) all the offspring will have dominant phenotype.
 - (b) all the offspring will have recessive phenotype.
 - (c) 50% of offspring will have dominant phenotype and 50% will have recessive phenotype.
 - (d) 75% of offspring will have dominant phenotype and 50% will have recessive phenotype.
2. A heterozygous violet-flowered pea plant is crossed to another homozygous violet-flowered pea plant. What percent of the progeny plants will have the recessive trait, i.e., white flowers?
 - (a) 0%
 - (b) 25%
 - (c) 50%
 - (d) 75%
3. From a cross AABb x aaBb, the genotypes AaBB: AaBb: Aabb will be obtained in the ratio
 - (a) 1:1:2
 - (b) 1:2:1
 - (c) 2:1:1
 - (d) 2:1:2
4. The possibility of all genotypes of offspring in a genetic cross is calculated by a graphical representation which was developed by
 - (a) Komberg
 - (b) T.H. Morgan
 - (c) Gregor Mendel
 - (d) Reginald Punnett
5. A woman with normal vision has a color blind father. She marries a colourblind man. What proportion of their children will be colourblind?
 - (a) 0%
 - (b) 25%
 - (c) 50%
 - (d) 100%
6. Mother and father of a person with 'O' blood group have A and B blood group respectively. What would be the genotype of both mother and father? (NCERT Exemplar)
 - (a) Mother is homozygous for 'A' blood group and father is heterozygous for B
 - (b) Mother is heterozygous for 'A' blood group and father is homozygous for B
 - (c) Both mother and father are heterozygous for 'A' and 'B' blood group, respectively.
 - (d) Both mother and father are homozygous for 'A' and 'B' blood group, respectively

7. The inheritance pattern of a gene over generations among humans is studied by the pedigree analysis. Character studied in the pedigree analysis is equivalent to (NCERT Exemplar)

- (a) Quantitative trait. (b) Mendelian trait
(c) Polygenic trait (d) Maternal trait.

8. Occasionally, a single gene may express more than one effect. The phenomenon is called: [NCERT Exemplar]

- (a) multiple allelism (b) mosaicism
(c) pleiotropy (d) polygeny.

9. Conditions of a karyotype $2n+1$ and $2n-2$ are called: [NCERT Exemplar]

- (a) Aneuploidy (b) Polyploidy
(c) Allopolyploidy (d) Monosomy

10. If a genetic disease is transferred from a phenotypically normal but carrier female to only some of the male progeny the disease is-

- (a) Autosomal dominant
(b) Autosomal recessive
(c) Sex linked dominant
(d) Sex linked recessive.

11. In a dihybrid cross, if you get 9:33:1 ratio it denotes that: [NCERT Exemplar]

- (a) The alleles of two genes are interacting with each other.
(b) It is a multigenic inheritance..
(c) it is a case of multiple allelism
(d) The alleles of two genes are segregating independently.

12. In sickle cell anaemia glutamic acid is replaced by valine. Which one of the following triplets codes for valine? (NCERT Exemplar)

- (a) GGG (b) AAG (c) GAA (d) GUG

13. Which of the following traits studied by Mendel in garden pea is a dominant trait

- (a) Terminal flowers. (b) Inflated pod.
(c) Green colour of seed. (d) Yellow colour of pod.

14. If a haemophilic woman marries a normal man,

- (a) all their children will be normal.
(b) all their sons will be haemophilic.
(c) all their daughters will be haemophilic.
(d) 50% sons and 50% daughters will be haemophilic.

16. Trisomy of 21 st chromosome in a male, leads to _____

17. Sex chromosome complement of a female bird is _____

MATHEMATICS

- **Revise the syllabus completed till May 2022.**
- **Complete the given assignments in the class.**

PROJECT WORK

- **Make Powerpoint presentation on the study of mathematical approach behind the construction of monuments.**

PHYSICAL EDUCATION

ASSIGNMENT

1. Define Management. Explain in detail the functions of sports events management.
2. Write about the various committees and their responsibilities.
3. Draw a fixture of nine (9) teams on the basis of league tournament using cyclic method. Explain British method to declare the Winner.
4. Draw a knockout fixture for 23 teams.
5. Failure of any one step disorganises the entire sports event. Explain with the help of suitable examples.
6. Draw a knock out fixture for 25 teams with all steps involved.
7. Write any two postural deformities and their corrective measures.
8. Describe any two of the Female Triad.
9. What do you understand by posture? Discuss the Kyphosis deformity.
10. Discuss in detail about Female Athletes Triad.
11. What are the causes of 'Flat Foot' and 'Knock Knees'? Suggest physical activities as corrective measures for these deformities.
12. Explain in detail about any five advantages of correct posture.
13. What do you mean by correct posture? Explain the standing and sitting postures. What are the causes of bad posture?
14. Define spinal curvature deformities and list their causes and precautions.
15. Describe the procedure for performing Gomukhasana along with its benefits and contraindications. 16. Which are the Asanas Practised for preventing Diabetes? Write in detail about any two of them.
17. Describe the procedure for performing Kapal-bhati along with its benefits and contraindications.
18. Which are the Asanas practised for preventing Hypertension? Write in detail about any two

of them.

19. Which are the Asanas practised for preventing Asthma? Write in detail about any two of them.

20. Describe five types of disorders with their symptoms and causes.

21. How physical activities are helpful for children with special need? Explain strategies to make physical activities assessable for them.

22. Plan a strategy for making physical activity accessible for Children with Special Need.

23. Write a detailed note on Paralympics.

24. Explain in detail about Special Olympic.

25. Explain Paralympic Movement in detail.

26. Write in detail about Deaflympics. What are the aims and objectives of Deaflympics?

27. What are the advantages of physical activities for children with special needs?

28. Explain the strategies to make physical activities accessible for children with special needs.