Scholars Global School
Enlightening • Empowering • Enterprising

HOLIDAY HOME WORK (WORK SHEET)

CLASS :: XII

English

1. Q. Make a creative power point presentation on Fiction / Poetry assigned by teacher in class. It should include 10 to 12 slides . Also add following things .....

a. Author's / Poet's Introduction and achievements

b. Theme , Central Idea , Message

c. Brief summary of the poem/fiction.

d. Poetic / literary Devices Used

Ruberics for Assessment :- Creativity , originality and Presentation.

2.Q- Prepare a project file on the fictions 'The Enemy '. The instructions regarding the same are attached below:-

i. Acknowledgement

ii. Certificate Of Completion

iii. Critical Appreciation of the Fictions (1 page)

iv. Pen- Portrait of - Sadao, Hana, General and Evans

v. Learnings from the Fictions in context to today's time.

3. Q- Solve the assignment attached overleaf in your English Registers.

Note :- Revise whole syllabus covered till date. Ruberics for Assessment :-

i) Presentation - 2.5

ii) Accuracy- 2.5

iii) Content- 2.

iv) Coherence And Creativity- 2.5

ASSIGNMENT

1. Read the extract given below and briefly answer the questions that follow each:

a. But I say there are three, because I've been on the third level of the Grand Central Station. Yes, I've taken the obvious step: I talked to a psychiatrist friend of mine, among others.

1) Who is referred as 'I' in the above extract?

2) Write the name of the 'friend' referred in above lines.

3) Where was 'I' coming from?

b. Well, maybe, but my grandfather didn't need any refuge from reality; things were pretty nice and peaceful in his day, from all I hear, and he started my collection.

1) Which 'collection' is being referred to in the above extract?

2) To whom does 'I' refer to in the above extract?

3) Which word in the extract mean 'escape'?

2. Answer the following questions in 30-40 words:

a. What made Louisa, Charley's wife, believe that the third level was a reality?

b. What idea did Charley have about the tunnel and why didn't he tell the psychiatrist about it?

c. What, according to the psychiatrist, was Charley's problem?

d. Describe Charley's character with special reference to his escapist tendency.

e. How did Charley realize that he was on the third level?

f. Why did the narrator talk to a psychiatrist friend of his and what did he say about the third

3. Q :- The story is narrated by a French boy, Franz. He is lazy but sensitive and likes to play. He dislikes studying French and hates his teacher M. Hamel. After overpowering their districts of Alsace and Lorraine in France, Berlin has
ordered that German language instead of French be taught in the schools there.It is the last day of their French teacher M. Hamel, who has been there for forty years. He is full of grief, nostalgia and patriotism. As a mark of respect to his hard work, the village men also attend his last lesson'. They are sad as they did not learn their mother tongue, French in their childhood. Franz is shocked to know that it's his last lesson, as he does not know French. Now, suddenly, he gets interested in learning it and understands everything taught on that day!He develops an instant liking for the teacher, M. Hamel and respects him for his sincerity and hard work. He feels
sad at departing from him and is ashamed for not being able to recite the lesson of participles. M. Hamel tells them that they all are at fault for not being eager enough to learn, putting it off to the next day. He blames

himself for not teaching them sincerely.His patriotism is reflected in his praise for the French language as being the most beautiful and most
logical language in the world. He tells the class to guard their language as being close to one's language is the key to escape from the prison of slavery. It will help them in getting free from the Germans. They realize the importance of learning their mother tongue and that they have been defeated by the Germans because of their illiteracy.Franz feels that it is not possible to take away one's language from a person as it is natural to each being, may it

be the ―coo‖ to the pigeons or ―French‖ to the Frenchmen. M. Hamel writes ―Viva la France‖ on the board signifying his love for his nation and language at the end of the story.

Answer the questions –

1/ What tempted Franz to stay away from school?
2/ What was unusual about M Hamel's dress on his last day in the school?
3/ Who were sitting on the back benches during M Hamel's last lesson? Why?
4/ What shows M Hamel's love for the French language?
5/ What made M Hamel cry towards the end of his last lesson?
6/ How was the scene in the school in the morning of the last lesson different from that on other days?

BUSINESS STUDIES

Chapter 1, 2 &3

Instructions :

1) **Stay Motivated and think as if you are a manager or owner of one company while doing following case studies**
2) **Do only Two case studies daily**
3) **Choose any one project from the following options and inform the teacher and discuss also start collecting material as per your convenience.**

(Question Bank to be done in School Notebook)

1 Arvind is working as an Operation Manager at Usha Martin in Ranchi. Which level is he serving? List out any two functions of this level.

2 Air India intends to extend its international flight to Pakistan, Afghanistan and China over next 3years. For this it intends to work out on the impact of terrorism, taxation policy, landing rights for foreign countries and consumer legislation for compensation of cancelled flights. Identify the concerned element at macro level.

3 Dr. Tanmay a senior cardiothoracic surgeon is concerned about depleting health index in India. Being a CMO (Chief Medical Officer) of Government Hospital, he is given the responsibility to probe into the situation by health ministry. One of the major reason found in his survey was aerated drinks and fast food consumption by youth under compulsion. Hospital authorities were instructed to guide some segments of hotel industry to prepare zero-oil food with all basic nutrients required by body. The concept was unique within itself and was appreciated by health conscious people. Only selected restaurant's outlet were called for a need based training. In this process first approach was to eliminate unnecessary items from menu card and add calorie value as well as precautions if any along with the price. Next standard time for processing the order was fixed to avoid waiting time. Movement of waiters , cook and other staff was closely monitored. Within 6 months the concept gained momentum in market.

Identify by quoting lines the following:-

A The concerned principle and technique of scientific management.

B The benefit of this environmental survey.

C Identify the level at which Dr. Tanmay is serving and which objective of hospital is satisfied by thisact.

4 A medicine company sends medicines to retailer through roadways which costs him nominal. During civil disturbance, despatch of consignment for the month of April 2017 wasdelayed .Management decided to send the same through courier even though it would cost very high. Which aspect of management is taken care of here?

5 As a management student, Rahim is to study Anthropology, Sociology, Psychology, Physiology, Mathematics, Economic, English, Political science and other subjects indifferent permutation and combination . Which characteristics of management are highlighted in this case?

6 Through e- Chaupal ITC intends to change the quality of life for Indian farmers. Which objective of management is being highlighted by the approach of ITC?

7 An organization is going in loss for last two year. A management consultant group had been hired by top level executives. The management consultant team had interviewed various departmental heads . They found that:-

1. The production manager said that he was not given proper marketfeedback.

2. Marketing manager gave feedback of poor quality produced by the production department therefore sales declined.

3. Finance department gave feedback that money could not be released in time due to lack of fund and information.

As a member of manager consultant committee.

1. Identify the problem and comment on its nature
2. List the elements ofit
3. Give solution.

8 Identify and explain the principles of management in concerned cases-

a. Once followed reduces the need of punishment

b. Both employer and employee have to move towards prosperity together

9 Amit is marketing manager, Bijoy is the finance manager and Chandan is production manager of TELPA Ltd which produces wheel barrow. Due to a local event in the town there is sudden requirement of 15,000 units within 7 days . To encash this opportunity, Amit directly contacted Chandan on the execution aspect rather taking lengthy routine channel of communication. They both contacted Bijoy for availability of fund. Thus it led to hugeprofit.

i. Explain under which provision Amit contacted chandan.

ii. Explain the nature of behavioral element existing among the 3managers.

iii. How this behavioral element is related to a technique of working.

10 Explain Functional Foremanship and Differential Piece Wage System as the technique of scientific management.

11 Your brother isworkingasOperationalmanagerinXcompany.Which level is he serving?
List out any 4 functions that he might be performing.

12 Ramu, an auto-mechanic, was working in a city. But due to ill health of his parents he was compelled to shift to his village. Before final packing he visited village thrice with the intention of surveying . He found that the village was approximately seven kilometres away from the nearest highway. He noticed that vehicles which broke down had no repair facility in that area. Further survey revealed that if he opens a Auto-Service-Centre he can earn for his livelihood. He motivated some young boys of his village to join him for providing this service. He trained them and employed them in his workshop.

a) Which benefit has he availed from environmental analysis.

b) State three other benefits of environmental scanning.

c) Identify any two values which was communicated to the society by Ramu'sbehaviour

13 Medical transcription has led to creation of job opportunity for secretarial practices in Indian market. This is due to inherent difference in time of India and America as well as work permit clearance in between the two countries. Mrs Jha along with her friend has opened a institution for vocational training which is to be given to 12^{th}pass candidates for this purpose . Further she takes guarantee for 100% placement .She often gets suggestion from her employees for image building and performance enhancement. There is perfect understanding in between her editorial staff, faculties and placement officer. By quoting the lines from above para answer following:-

a. Name the concerned environmental factors?

b. Which principles of management are followed here? What values are communicated through this act?

14 A supervisor of L Company is well-versed in his job and is equally a good HBS (human behavior specialist) but often fails in giving output for production: Identify the area with specification where he is not capable of?

17 An Army School reserves 5% seats for war widows as its basic recruitment policy.

Which objective of management is it satisfying?

18 The CEO of a company gives statement in its annual function showing his intention to ensure that the people who are moving out of the gate every evening need to come back next morning to office willingly and with full zeal. Which function of management is highlighted in this statement?

19 Amit, who is a marketing manager of a construction company ensures top level management to get a tender in their favour for flyover construction. This was a tough target for which he requested to get 10% of the contract value to be spent without any clarification. Since it was a major project which would add to the good will of company, top level management accepted this offer. The tender was in favour of the company. How is the act of Amit to be interpreted?

20 As an academic head, Mr.X has to make the academic calendar of the institution for new session and for this he reviews the previous one for various amendments. Which quality of management is highlighted here?

22- Alpha group intends to enter into a new venture which was spotted through SWOT analysis by top level but could not be properly worked out by middle level, therefore, low level was failing in its assessment session.

(a) Underline the phrase which shows the error in diversification plan.

(b) Identify the level at fault.

(c) Which function of that level could not be performed properly?

23 Coordination is required by managers at every level for the success of management. What is the nature of coordination? Can it be successful without cooperation? Give reasons.

24 Government of India intends to retain monopoly in fighter plane manufacturing unit. Therefore it intends to set up a separate department for the same. What would be the type of structure of the upcoming organization?

25 Rani after her marriage had to shift to a small place, Netarhat in Jharkhand. She realized that this place is gifted by nature's beauty and can be developed as a tourist spot where people could come and stay in a holiday resort for 2-3 days to see sun rise & sunset with mountains and valley's adding beauty & thrill. Further local people have to be trained & developed on hospitality aspects like tourist guide, receptionist etc. With the cooperation of local people, she worked on this project. The overall estimate to meet the expenses came to Rs. 5 crore. For this she contacted specialized financial institutions. Thus she not only started but managed the organisation within short span of time.

A Which principle of Fayol helped her to be successful in this venture?

B Which factor of environmental factor helped her?

POLITICAL SCIENCE

- Make a Digital project file on the given topics. (Different topics have given in class)

ASSIGNMENT OF POLITICAL SCIENCE
ALTERNATIVE CENTRES OF POWERS

SECTION - A

Q1. Arrange the following in chronological order:
(a) China's accession to WTO 2001 (b) Establishment of the E.E.C. 1957
(c) Establishment of the E.U. 1992 (d) Birth of A.R.F. 1999

Q2.The 'ASEAN Way'
(a) Reflects the lifestyle of ASEAN members
(b) A form of interaction among ASEAN members that is informal and co-operative.
(c) The defence policy followed by the ASEAN members.
(d) The road that connects all the ASEAN members.
Q3. Who among the following adopted the 'Open door' policy?
(a) China (b) E.U. (c) Japan (d) U.S.A.
Q4.The border conflict between China and India in 1962 was principally over the _____ and _____ region.Q5.ARF was established in the year _____
Q6.China entered into bilateral relations with _____ (a major country) in 1972.
Q7. _____ plan influenced the establishment of the organization for European Economic Cooperation in 1948.
Q8. _____ is an organization of ASEAN that deals with security.
Q9. The Council of Europe was established:
(a) 1948 (b) 1949 (c) 1970 (d) 1994
Q 10. In January 2007 which of the following countries joined E.U.?
(a) Finland and Sweden (b) Denmark and Ireland
(c) Bulgaria and Romania (d) Germany and England
Q11. In which year Unification of Germany took place?
(a) October 1990 (b) January 1990 (c) October 2000 (d) January 1995
Q12. Informal, non-confrontationist, and cooperative interaction among members of South East Asian Nations is also called _____
Q13.What is the main objective of ASEAN?
Q14.Which organization was established under the 'Marshall Plan'?
Q15. In which year did the Unification of Germany take place?
Q16. In which year China adopted the 'Open Door policy in the economy?
Q17.When China became a member of the World Trade Organization?
Q18. When was European Union established?
Q19. In which year Council of Europe was established?
Q20. When did China attack India?
Q21.Mention two countries who are the members of the E.U.?
Q 22. In which year China adopted privatization of agriculture?
Q23. What is the currency of the European Union?

SECTION - B

Q1.What is the full form of ARF? When was ARF formed? What work does it carry out?
Q2.What is FTA? Which two ASEAN countries has India signed FTAs?
Q3. What is the ASEAN vision 2020?
Q4. Explain India's relationship with ASEAN countries.
Q5. Why is ASEAN primarily considered as economic association?
Q6.What work has been done by ASEAN Security Community?
Q7.Identify the three issues of conflict between China and India.
Q8. Explain the positive developments in Indo Chinese relations after 1976.

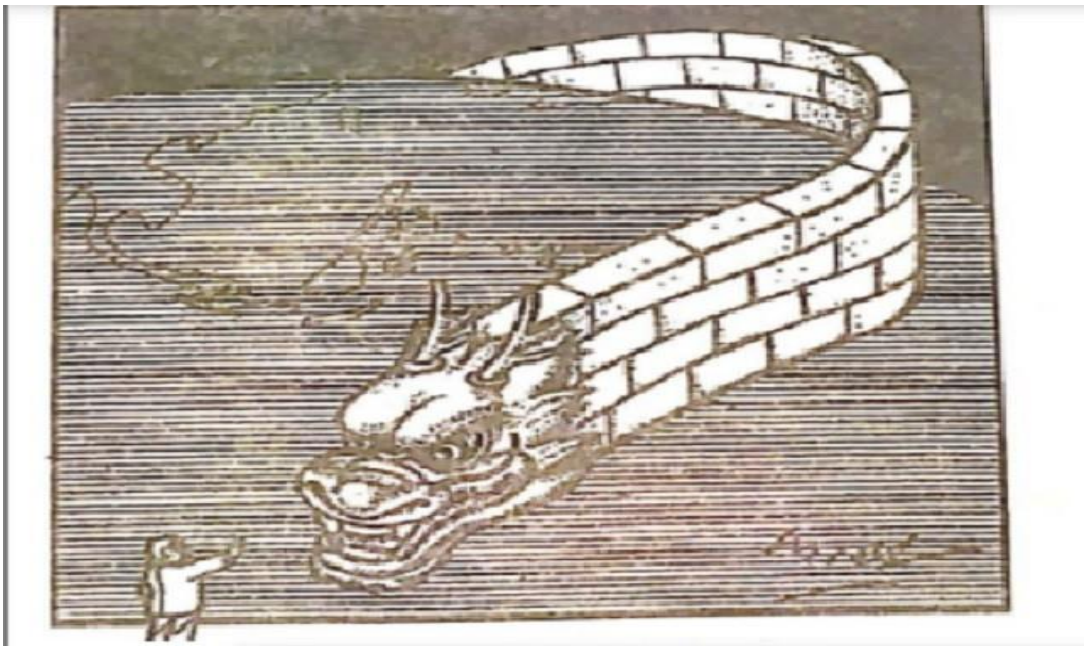
SECTION - C

Q1. What were the new economic policies adopted by China in 70's, 80's, And 90's? What has been the effect of new economic policies adopted by China?
Q2. What are the limitations of Chinese economic reforms?
OR
In what areas have Chinese economic reforms failed?
Q3. Explain the role of emerging alternative centers of power in transforming the different countries into prosperous economies.

Q4. Why do India and China both view themselves as rising powers in global politics in spite of tension between them?
Q5. Explain the role of emerging alternative centres of power in transforming the different countries into prosperous economies.
Q 6. Identify the contentious issues between China and India. How could these be resolved for greater cooperation? Give your suggestions.
Q7. What steps should be taken to strengthen the ASEAN in the international community?
Q8. How does geographical proximity influence the formation of regional organizations?

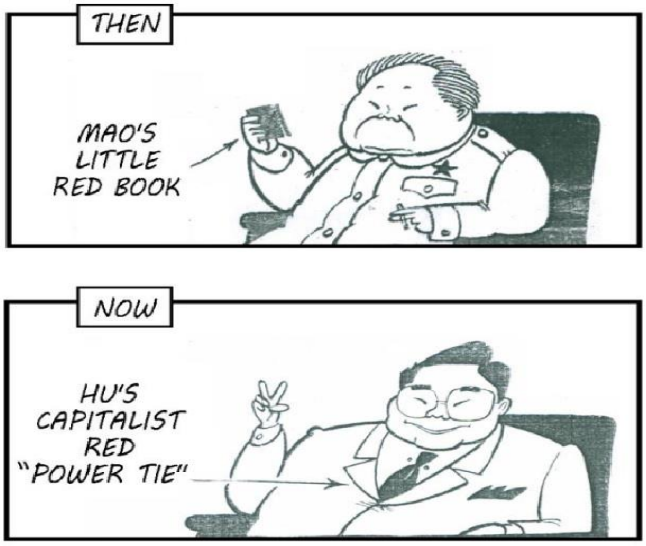
SECTION – D

Q1. Study the given cartoon carefully and write answer of following questions:



1. Which part of this cartoon is related to China?
2. Asses the strength of China on this basis of this cartoon.
3. 'China may be the next superpower in the world'. Justify the statement with two arguments.

Q2. Study the given cartoon carefully and write answer of following questions:



1. Which country does this cartoon refer to?
2. Evaluate any two changes in the economic policies of this country from 'then' to 'now'.
3. Assess any two outcomes of the latest changes that took place in this country.

MATHEMATICS

Topic	Contents	Degree of importance	Questions from NCERT Text Book
Relations And Functions	(i) Domain, Co-domain & Range of relation	*	Previous Knowledge
	(ii) Types of relation	***	Ex 1.1 Q.No.3, 5,9,12 Example 4
	(iii) One-One, Onto & Inverse of a function	***	Ex 1.2 Q.No. 7,9
	(iv) Composition of functions	*	Ex 1.3 Q.No. 7,9,12,13 Example 17,23 Ex 1.4 Q.No. 5,11 Example 45
Inverse Trigonometric Functions	(i) Principal Value branch table	**	Ex 2.1 Q.No. 5,9,11,14
	(ii) Properties of In verse Trigonometric Functions	***	Ex 2.2 Q.No. 7,13,15 EXAMPLE 5 Misc. Ex Q No. 9,10,11,13 Example 10,11
Matrices and Determinants	(i) Order, Addition, Multiplication and transpose of matrices	***	Ex 3.1 Q.No. 4,6 Example 22,24 Ex 3.2 Q.No. 7,9,13,17,18. Ex 3.3 Q.No. 10
	(ii) Cofactors & Adjoint of the matrix	**	Ex 4.4 Q.No. 4,5 Ex 4.5 Q.No. 12,13,15,17,18
	(iii) Inverse of a matrix & applications	***	Ex 4.6 Q.No. 15,16 EXAPLE 29,30,32,33 Misc. Ex. Q.No. 4,5,8,12,15,16,17
	(iv) To find the difference between $\|A\|$, $\|adj\ A\|$, $\|kA\|$, $\|A.adj\ A\|$	*	Ex 4.1 Q.No. 3,4,7,8 Example - 16,18
	(v) Properties of determinant	**	Ex 4.2 Q.No. 11,12,13,14
Continuity and Differentiability	(i) Limit of a Function	*	Previous Knowledge
	(ii) Continuity	***	Ex 5.1 Q.No. 18,21,26,28,30
	(iii) Differentiation	*	Ex 5.2 Q. No. 6,9 EX 5.3 Q NO. 4,7,13
	(iv) Exponential and Logarithmic Differentiation	***	Ex 5.4 Q.No. 3,7 Ex 5.5 Q.No. 6,9,10,15
	(v) Parametric Differentiation	***	Ex 5.6 Q.No. 5,7,8,10,11
	(vi) Second Order derivatives	***	Ex 5.7 Q.No. 12,14,16,17
	(vii) Mean value Theorem	**	Ex 5.8 Q.No. 3,4 Misc Ex Q.No. 9,14,16,23
Applications Of Derivatives	(i) Rate of Change of Quantities	*	Example 4, Ex 6.1 Q.No. 5,9,11,14
	(ii) Increasing & decreasing functions	***	Example 12,13, Ex 6.2 Q.No. 6,9
	(iii) Tangents and Normals	**	Ex 6.3 Q.No. 5,8,13,15,19,23

(iv) Approximations	*	Ex 6.4 Q.No. 1,3,7
(v) Maxima and Minima	***	Ex 6.5 Q.No. 8,17,20,22,23,25
		Example 35,36,37,43 Misc. Q.No. 14,17,18

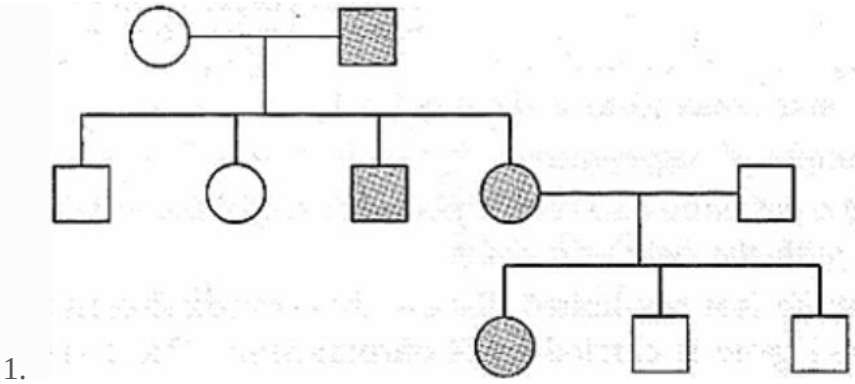
BIOLOGY

- LEARN ALL THESE Q/A GIVEN FROM CH 3 AND CH 5.
- PRACTICE ALL THE 5 MARKERS q AND DIAGRAMS ON YOUR CW NOTE BOOK.
- COMPLETE YOUR PRACTICAL LAB FILE.
- COMPLETE YOUR CBSE PROJECT FILE.
- ABHINAV- EFFECT OF VACCINATION IN COVID -19
- ARZOO- ADOPTION VS IVF
- KHUSHI-MEDICAL COLLEGES IN INDIA: SEAT MATRIX AND ADMISSIONS
- KRITIKA-TO STUFY EFFECTS OF DIETS ON BLOOD GLUCOSE
- DEVENDER-TO INVESTIGATE DIFFERENT METHODS OF PRODUCTION OF BIO DIESEL FROM WASTES
- SANVI-STOP FEMALE FOETICIDES
- MANISHA- DRUG ADDICTION: SAY "NO" TO DRUGS

PROBLEMS ON MENDELIAN INHERITANCE:

Q1. **A colour-blind father has a daughter with normal vision. The daughter marries a man with a normal vision. What is the probability of her children to be colour blind? Explain with the help of a pedigree chart.**

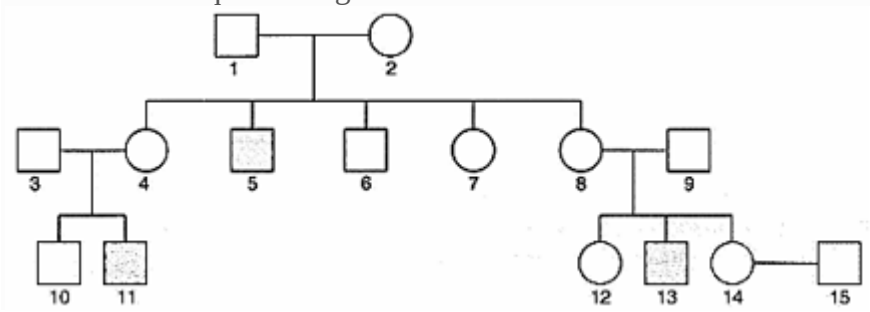
Q2. Study the given pedigree chart and answer the questions that follow:

1. 

1. Is the trait recessive or dominant?
2. Is the trait sex-linked or autosomal?
3. Give the genotypes of the parents shown in generation I and their II child is shown in generation II and the first grandchild shown in generation III.

Q2.Haemophilia is a sex-linked recessive disorder of humans. The pedigree chart given below shows the inheritance of haemophilia in one family. Study the pattern of inheritance

and answer the questions given.

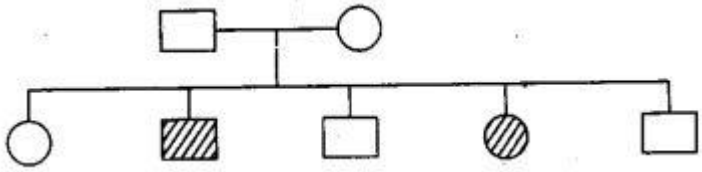


Q3.Give all the possible genotype of the members 4, 5 and 6 in the pedigree chart.

Q4.A blood test shows that the individual 14 is a carrier of haemophilia. The member numbered 15 has recently married the member numbered 14. What is the probability that their first child will be a haemophilic male?

Q5. In a certain taxon of insects, some have 17 chromosomes and the others have 18 chromosomes. The 17 and 18 chromosome-bearing organisms are
(a) Males and females, respectively (b) Females and males, respectively (c) All males (d) All females. EXPLAIN

Q6.The pedigree chart given below shows a particular trait which is absent in parents but present in the next generation irrespective of sexes. Draw your conclusion on the basis of the pedigree.



Q7. A, B, D are three independently assorting genes with their recessive alleles a, b, d, respectively. A cross was made between individuals of Aa bb DD genotype with aa bb dd. Find out the type of genotypes of the off spring produced.

Q8.In peas, tallness is dominant over dwarfness, and red colour of flowers is dominant over the white colour. When a tall plant bearing red flowers was pollinated with a dwarf plant bearing white flowers, the different phenotypic groups were obtained in the progeny in numbers mentioned against them:

Tall, Red =138
Tall, White = 132
Dwarf, Red =136
Dwarf, White =128
Mention the genotypes of the two parents and of the four offspring types.

Q9.A normal visioned woman, whose father is colour blind, marries a normal visioned man. What would be probability of her sons and daughters to be

colour blind? Explain with the help of a pedigree chart.

- ❖ SOLVE ALL THESE ALONG WITH REASONS, PEDIGREE ON CW NB.

CH5 Important Questions for Class 12 Chapter 5 Principles of Inheritance and Variations

Inheritance is the transfer of genes from parents to the offsprings. The principles of inheritance and variation were explained by Gregor Mendel in his experiments on a pea plant. He stated three laws of inheritance on the basis of his observations with the pea plant:

- Law of Dominance
- Law of Segregation
- Law of Independent Assortment

Very Short Answer Type Questions

Q.1. What is the cross known as when the progeny of F1 and a homozygous recessive plant is crossed? State its advantage.

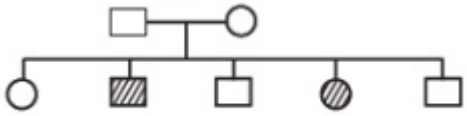
A.1. The cross is a test cross. It is advantageous to determine the genotype of the parent plant.

Q.2. What are the criteria for selecting organisms to perform crosses to study the inheritance of a few traits?

A.2. The following criteria are adopted for selecting organisms:

- The traits should be easily visible.
- The organisms should have different traits.
- They should have a short life span
- They must be true breeds
- The pollination procedure should be simple.
- The traits can be manipulated easily
- Random mating of gametes should take place

Q.3. The following pedigree shows a particular trait which is absent in the parents but found in the subsequent generation irrespective of the sexes. Analyze the pedigree and draw a conclusion.



A.3. The pedigree shows an autosomal recessive disorder. The parents are the carrier of the disease so the disease will be visible in only a few offsprings. The other offsprings will be either a carrier or non-carrier.

Q.4. Why did Mendel self-pollinate the tall F1 plants to get the F2 generation and crossed a pure breeding tall plant with a pure breeding dwarf plant to obtain the F1 generation?

A.4. The genotype of 50% of the offspring will resemble one parent and the rest 50% will resemble the other parent. The F1 generation obtained from the cross is heterozygous. So selfing the F1 generation is sufficient to obtain the F2 generation. It would also help to understand the inheritance of selected traits over generations.

Q.5. How are the alleles of a gene different from each other? What is its importance?

A.5. Alleles are the alternative forms of the same gene. For eg., a gene for height comprises of two alleles, one for tall (T) and the other for the dwarf (t). They differ in their nucleotide sequence due, which results in different phenotypes.

Importance:

- They are essential in studying the inheritance and behaviour patterns.
- They show variations in the population due to contrasting phenotypes of a character.

Q.6. How far are the genes and environment responsible for the expression of a particular trait?

A.6. The genes remain active throughout our lives, switching on and off their expression in response to the environment. The external factors such as light, temperature, nutrition, etc. are responsible for the gene expression exhibiting changes in the phenotype. Genes provide potentiality while the environment provides an opportunity for the expression of the traits.

Q.7. What is the genetic basis of the wrinkled phenotype of pea seed?

A.7. A single gene determines the shape of the seed. The (R) is for the round shape, which is dominant over (r) for the wrinkled seed. If homozygous alleles control the seed shape, it will depict the phenotype of same alleles, for eg., RR (round), rr (wrinkled). If the alleles are heterozygous, the phenotype of the dominant allele will be expressed, for eg., Rr (round).

Q.8. Why does an individual have only two alleles even if a character shows multiple alleleism?

A.8. The multiple forms of an allele that occurs on the same gene locus are known as multiple alleles. But an individual carries only two alleles. This happens because a zygote is formed by the fusion of haploid sperm and egg. They have only one allele for each trait. When the zygote becomes diploid, it has two alleles for each trait.

Q.9. How is a mutation induced by the mutagen? Explain with examples.

A.9. The mutagen changes the base sequence by insertion, deletion or substitution and induces mutation.

Q.10. Differentiate between dominance, co-dominance and incomplete dominance.

A.10. Dominance is the phenomenon in which one variant of a gene masks the effect of a different variant of the same gene.

Co-dominance is the relationship between two alleles of a gene. In this none of the alleles are recessive and the phenotype of all the alleles are expressed.

Incomplete dominance is a form of intermediate inheritance in which one allele for a specific trait is not expressed completely over its paired allele.

Q11.Define the chromosomal theory of inheritance?

A11. The chromosomal theory of inheritance is defined as the fundamental theory of genetics, which recognizes chromosomes as the carriers of genetic material.

Q12. Define Linkage?

A12. In genetics, the linkage is defined as the tendency of genes to remain combined together during the inheritance. This phenomenon was first observed and reported by William Bateson and R.C. Punnet in the early 1900s.

Short Answer Type Questions

Q.1. How is it possible for a child to have a blood group O if the parents have blood groups A and B?

A.1. Case I- If the father is I^A and mother is I^B, the child will have blood groups AB, A, B, O. Case II- If a father is I^A and mother is I^B, the child will have the same blood groups as in the case I, i.e., AB, A, B, and O. Thus if the parents have heterozygous alleles, the child will have blood group O.

Q.2. Explain Down's syndrome.

A.2. Down's syndrome is an autosomal genetic disorder caused by trisomy at chromosome 21, i.e., there is an extra copy of chromosome 21. This condition affects an individual both physically and mentally. Children born with Down's syndrome have a flat nose and small ears. They face problem in thinking,

understanding and reasoning throughout their lives. They might have trouble hearing and seeing. They are often dwarf.

Q.3. Why is it that women exceeding 40 years of age have more chances of having a child with Down's syndrome?

A.3. The women exceeding 40 years of age have more chances of having a child with Down's syndrome because increased age affects the meiosis of chromosomes adversely. The meiosis remains incomplete until fertilization. It remains arrested at prophase-I and the chromosome is unpaired. If the fertilization occurs after a very long gap, the chromosomes will have to remain unpaired for a longer time. The longer the time of unpairing, the greater are the chances of its non-disjunction, and hence conditions like trisomy arise.

Q.4. How was it known that the genes are located on chromosomes?

A.4. The chromosomal theory of inheritance proposed by Bovine and Sutton stated that the genes are present on specific locations on a chromosome. Later, Thomas Morgan observed mutation in the eye colour of the fruit flies and based on the inheritance patter concluded that the gene responsible for the eye colour is located on the X-chromosome.

Q.5. A plant with yellow flowers was crossed with a plant with red flowers. The F1 progeny obtained had orange flowers. What is the inheritance pattern?
A.5. The inheritance is incomplete dominance. In this, a new intermediate phenotype between the two original phenotypes is obtained. One allele for a specific trait is not completely expressed over the other allele for the same trait.

Q.6. Mention the characteristics of a true-breeding line.
A.6. Characteristics if true breeding is as follows:

- It undergoes self-pollination.
- It depicts stability in the inheritance for several generations.
- Provide gametes with similar traits, hence used as parents for artificial hybridization.
- Homozygous recessive plants are used to identify the genotype through a test cross.

Q.7. Who had proposed the chromosomal theory of inheritance?

A.7. Theodor Boveri and Walter Sutton are the two scientists who were credited with developing the Chromosomal Theory of Inheritance during the early 1900s.

Q.8. What is recombination? Mention its applications with reference to genetic engineering.

A.8. Recombination is the process of producing a new combination of genes by crossing over during meiosis.

Applications:

- It is a means of introducing new traits.
- Variability is increased, which is necessary for natural selection.
- It is used for preparing linkage chromosome maps.
- The desired recombinants produced as a result of crossing over are selected by the plant breeders to produce new crop varieties.

Q.9. Why does sickle-cell anaemia persist in the human population when it is believed that the harmful alleles get eliminated from the population after a certain time?

A.9. Sickle cell anaemia is an autosomal recessive disease in which the red blood cells become sickle-shaped, inhibiting the oxygen-carrying capacity of the blood. Despite this, it protects the carrier from malaria. Individuals with heterozygotes HbAS survive more than the homozygotes HbSS because they are not exposed to the same severity of risks.

Q.10. Define artificial selection. Has it affected the process of natural selection?

A.10. Artificial selection is the intentional breeding of plants and animals where the breeders select the desired traits and make them breed to produce offsprings with the required characteristics. It is an ancient method of genetic engineering. It surely affects the process of natural selection. The individuals cannot evolve on their own. The process is a threat to biodiversity. The traits are not selected considering the fitness of the organism.

Q11.What are Sex chromosomes?

A11. Sex chromosomes are defined as a pair of chromosomes, which determine whether an individual is male or female. In all mammals, including humans, have sex chromosomes X and Y in their cells. Females have two X chromosomes(XX), and males have an X and a Y chromosome (XY).

Q12.What are chromosomes and who discovered chromosomes?

A12. Chromosomes are thread-like structures present within the nucleus of a cell. Each species has a unique number of chromosomes and it varies from one organism to another. Humans have 23 pairs of chromosomes and Humans have 23 pairs of chromosomes.

Carl Wilhelm von Nageli, a Swiss botanist, discovered chromosomes. He was the first person to observe chromosomes in plant cells in the year 1842.

Long Answer Type Questions

Q.1. What is aneuploidy? Differentiate between aneuploidy and polyploidy.

A.1. Aneuploidy is the chromosomal abnormality in which one or more chromosomes are gained or lost during meiosis due to the non-disjunction of chromosomes.

Differences between aneuploidy and polyploidy:

Polyploidy is a type of chromosomal aberration containing an entire extra set of chromosome. It may be triploid or tetraploid. This phenomenon is common in plants. It is, however, lethal in animals.

Q.2. Describe the individuals with the following chromosomal abnormalities:

1. **Trisomy at chromosome 21**
2. **XXY**
3. **XO**

A.2.

1) **Trisomy**– Trisomy results in an autosomal linked genetic disorder known as Down's syndrome. The individuals exhibit the following characteristics:

- Protruding tongue
- Roundhead
- Slanting eyes
- Short height
- Open mouth
- Short neck
- Mental retardation
- Under-developed genitals and gonads

2) **XXY**– The presence of an additional copy of an X-chromosome results in Kleinfelter's syndrome. The patient exhibits the following characteristics:

- The male individual possesses feminine characteristics.

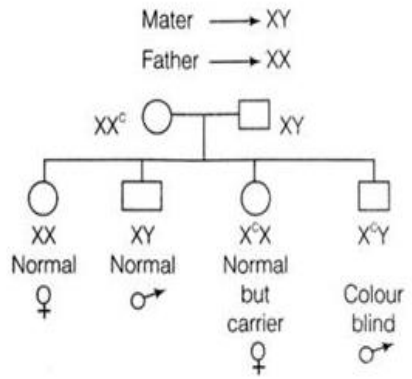
- Development of breasts in males
- Male is sterile
- Poor beard growth
- Feminine voice

3) **XO**– Loss of X-chromosome results in Turner's syndrome. Characteristics:

- The female is sterile.
- The ovaries are immature.
- Webbed neck
- Thorax is shield-shaped
- Under-developed breasts.
- Puffy fingers
- Short height
- Uterus is small

Q.3. A colour-blind father has a daughter with normal vision. The daughter marries a man with a normal vision. What is the probability of her children to be colour blind? Explain with the help of a pedigree chart.

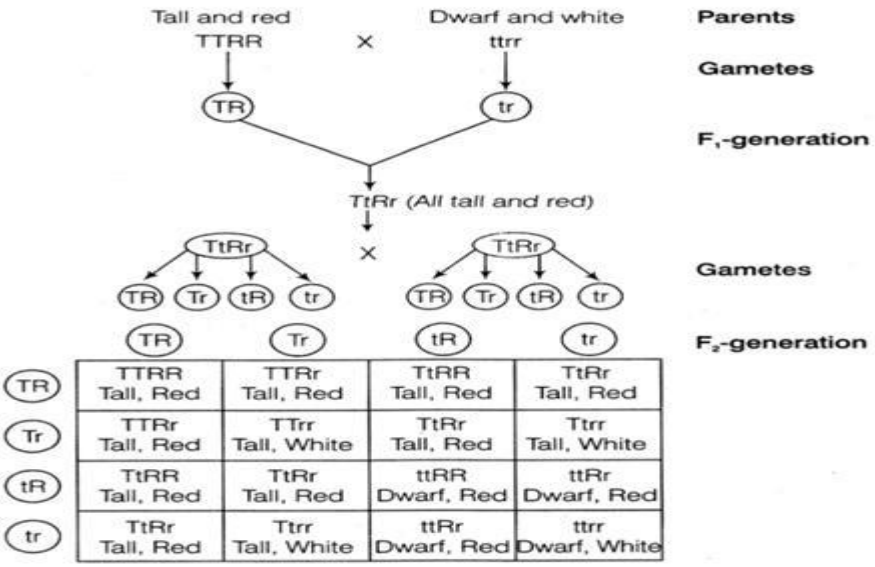
A.3.



50% of daughters are carrier while 50% have a normal vision. 50% of sons are diseased while the other 50% will have normal vision.

Q.4. A tall plant with red flowers (dominant) is crossed with a dwarf plant with white flowers (recessive). Work out a dihybrid cross and state the dihybrid ratio. What will be the effect on the dihybrid ratio if the two genes are interacting with each other?

A.4.



The standard dihybrid ratio observed is 9:3:3:1. If the two genes interact with the values will deviate. This is because when the genes are linked they do not exhibit independent assortment and remain together in the gametes and the offsprings. The dihybrid ratio thus obtained is 3:1.

Q.5. Why is Drosophila used extensively for genetic studies?

A.5. Drosophila is extensively for genetic studies because it has the following characteristics:

- They have a life span of two weeks.
- They can be grown in the laboratory on simple synthetic medium.
- A large number of progenies are produced by a single mating.
- The male and the female Drosophila can be differentiated easily.
- It has many variations easily visible under a simple microscope.

Q6.List out the characteristics of the chromosome theory of Inheritance.

A6.

The important characteristics of the chromosome theory of Inheritance are:

1. Fertilization restores diploid condition.
2. Chromosomes segregate and assort independently.
3. Homologous chromosomes separate at the time of meiosis.
4. Both chromosomes, as well as genes, exist in pairs within the diploid cells.
5. Gamete contains only one chromosome of a particular type and only one of the two alleles of a character.

Q7.Define autosome, hemizygous, homozygous, and heterozygous?

A7.

Autosome– All chromosomes apart from the sex chromosomes are called the Autosomes. The number of autosomes differs from one organism to another. Humans have 44 number or 22 pairs of autosomes.

Hemizygous– It is a condition in which an organism has only one copy of a gene or DNA sequence present in diploid cells.

Homozygous— It is a condition in which an organism has two similar alleles of a given gene (XX).

Heterozygous–It is a condition in which an organism has two different alleles of a given gene (XY).

Q8.What are Sex-linkage?

A8. Sex linkage can be defined as the phenotypic expression of an allele, which is dependent on the individual's gender. It describes the presentation of the chromosome and the sex-specific patterns of inheritance. Sex linkage is directly tied to the sex chromosomes – homogametic sex and heterogametic sex. In mammals, the homogametic sex (XX) is female and the heterogametic sex (XY) is male. Thus the sex-linked genes are carried on the X chromosome.

Q9.Why is colour blindness more prominent in males than females?

A9. Colour blindness is a sex-linked disorder and the genes responsible are present on the X-chromosome. To become affected by the disease, the female should possess the alleles for colour blindness on both the X-chromosomes. If the allele is present on only one chromosome, the female becomes a carrier of the disease. Since males have only one X-chromosome, it carrying the allele renders them affected. That is why males are more prone to colour blindness.

Q10.Why did scientists select fruit flies for his genetics experiments?

A10. Drosophila melanogaster is a small common fly species, which belongs to the family Drosophilidae. This species is generally known as the vinegar fly or a fruit fly.

In the year 1830, Drosophila melanogaster was established as a key model organism for biomedical science and it is due to the considerable biological similarity to mammals and an abundance of available genetic tools.

Like humans, these fruit flies species have a similar distribution of chromosomes. An individual with a pair of X chromosomes is female fruit fly and an individual with one X and one Y chromosome is male.

Important Questions Chapter 3: Human Reproduction

Humans reproduce through sexual mode and are viviparous. Before the event of fertilization, a series of events take place, which differs in males and females. Gametogenesis in males is called spermatogenesis, whereas in females it is oogenesis, both of whose outcomes are different, i.e., sperm and an ovum respectively. The formation of the zygote is followed by the development of the blastocyst, which passes through different stages of development before childbirth. Through this chapter, we get to understand the human male and female reproductive system and functionalities of various reproductive organs in depth.

Explore important questions on Human Reproduction for CBSE Class 12 for a better understanding of the concept.

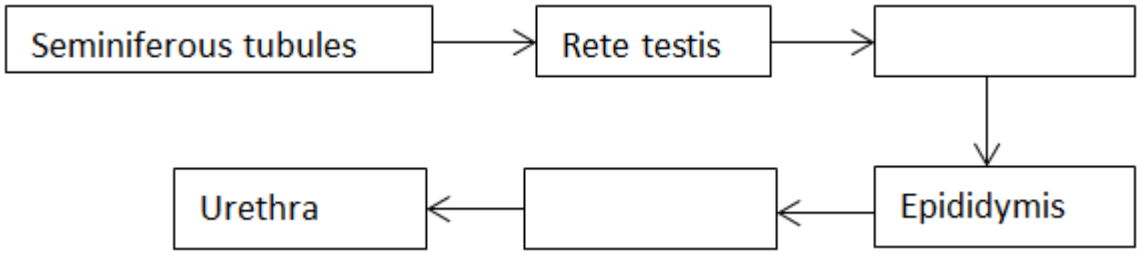
Very Short Answer Type Questions

Q.1. List the following events observed in human reproduction in chronological order. Fertilization, gametogenesis, insemination, gestation, parturition, implantation.

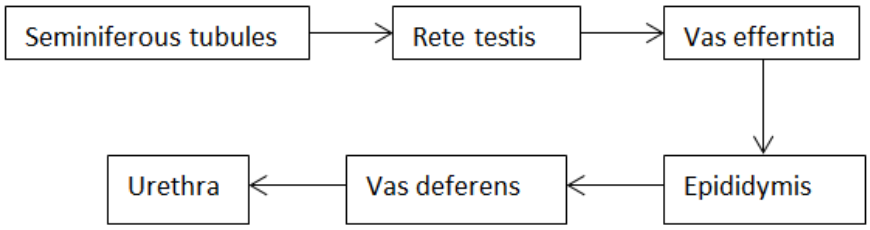
A.1. Following is the sequence of events occurring in the process of human reproduction:

1. Gametogenesis
2. Insemination
3. Fertilization
4. Implantation
5. Gestation
6. Parturition

Q.2. Fill in the missing boxes exhibiting the route of sperm transport.



A.2. Following is the pathway followed by a sperm.



Q.3. State the significance of cervix in the female reproductive system.

A.3. The cervix is a narrow opening through which the uterus opens up to the vagina. The cervical canal is the cavity of the cervix which alongside the vagina goes on to form the birth canal.

Q.4. What is the reason for the absence of menstrual cycles during conception or pregnancy?

A.4. During pregnancy, all the events of the menstrual cycle stop and there is no menstruation. Menstruation occurs only when the egg that is released is not fertilized. But in pregnancy, the released egg is fertilized and hence the uterus lining does not shed, instead nourishes the fetus. However, a woman may experience uterine bleeding during pregnancy due to various reasons. It is not due to the period.

Q.5. Fill up the missing data in the table where Column A shows female reproductive organs and Column B shows its respective functions.

Column A (Organs)	**Column B (Corresponding Functions)**
Ovaries	Ovulation
Oviduct	
	Pregnancy
Vagina	Birth

A.5. Following are the female reproductive organs and their associated functions.

Column A (Organs)	**Column B (Corresponding Functions)**
Ovaries	Ovulation
Oviduct	Fertilization
Uterus	Pregnancy
Vagina	Birth

Q.6. Name the hormone crucial in parturition. Does the parturition signal originate from the mother or the fetus?

A.6. The hormone is Oxytocin. The signal originates from the placenta and fully developed fetus which initiate the foetal ejection reflex triggering the release of the hormone, oxytocin.

Q.7. State the role of the epididymis in male fertility.

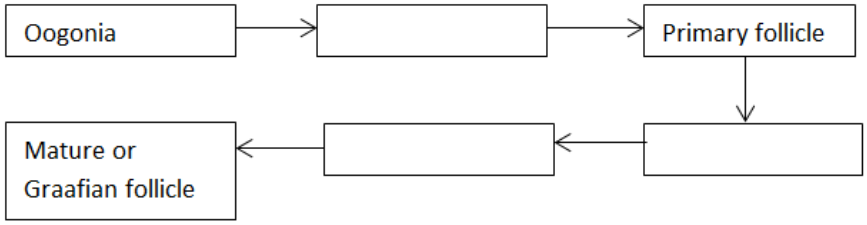
A.7. It is situated along the posterior surface of each testis where spermatozoa acquire motility and the capacity to fertilize the egg. The surface of the sperm is altered in response to secretions of the epididymis which is key to achieve the ability to fertilize an egg.

Q.8. List the names of the hormones, endocrine glands along with functions of the hormones that are crucial in causing spermatogenesis.

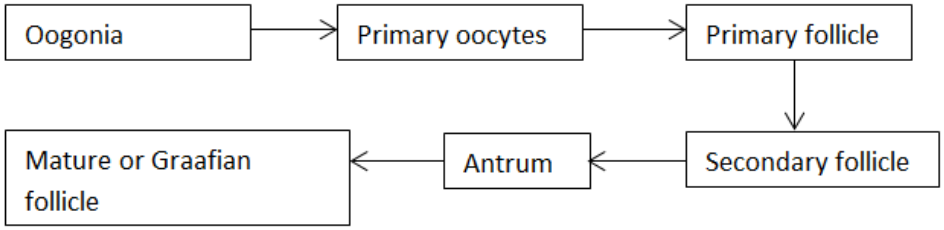
A.8. The table below provides the required data:

Name of the hormone	**Endocrine glands where the hormone is released**	**Functions of the hormone**
Gonadotropin-releasing hormone(GnRH)	Hypothalamus	Increase in secretion of GnRH initiates spermatogenesis at puberty age After acting on the anterior pituitary gland – triggers the secretion of LH and FSH
Luteinising hormone(LH)	Anterior pituitary gland	Triggers the production and secretion of androgens
Follicle Stimulating Hormone (FSH)	Pituitary gland	Acts on Sertoli cells and stimulates the secretion

Q.9. Fill in the missing boxes for the levels in the transformation of mother germ cells into a mature follicle.



A.9. The various steps in the formation of the mature follicle are as follows:



Q.10. What are the events that cause the chromosome number of gametes to go from 2n, n, and again back to 2n during reproduction?

A.10. Chromosomes replicate once but divide twice. They undergo mitosis, first meiotic cell division and second meiotic cell division, the outcome of which is n number of chromosomes. They fuse with the haploid(n) sex gamete of the opposite sex to form a diploid(2n) cell during reproduction.

Q.11. How is a primary oocyte different from a secondary oocyte?

A.11. The primary oocyte is a diploid cell whereas secondary oocyte is a haploid cell. The primary oocyte is formed when oogonia are at the prophase-I of the meiotic division in the foetal ovary whereas secondary oocyte is formed from primary oocyte after meiosis – I division to produce ova in females during the stage of puberty.

Q.12. State the role of the ampullary-isthmic junction in the female reproductive tract.

A.12. In the ampullary-isthmic junction, fertilization of the ovum takes place.

Q.13. How is polyspermy checked by the zona pellucida of the ovum?

A.13. The zona pellucida is a thick layer that is girdled by corona radiata cells. During fertilization, cortical granules are released from the egg which blocks fusing of multiple sperms with an egg.

Q.14. What is the significance of LH surge through the menstrual cycle?

A.14. It triggers the rupture of Graafian follicle and causes the release of the ovum in the fallopian tube.

Q.15. During which stage of cell division are spermatids formed from the secondary spermatocytes?

A.15. The second meiotic division.

Short Answer Type Questions

Q.1. State the significance of the following stages during the lifetime of a female.

1. **Menarche**
2. **Menopause**

A.1. The first menstruation or onset of menstruation at puberty is referred to as menarche. It indicates the attainment of sexual maturity and the commencement of the fertile period. Menstruation cycle is the cycle of events from one up till the next menstruation and is repeated for about 28 days on an average wherein one ovum is released. Menopause, on the other hand, is when the menstruation cycle comes to a halt, indicating the end of the fertile period as the process of ovulation stops. Cyclic menstruation denotes a regular reproductive phase stretching from menarche to menopause.

Q.2.

a. How many spermatozoa does one secondary spermatocyte produce?

b. Where in zygote does the first cleavage division occur?
A.2. a. The secondary spermatocytes undergo meiotic division – II to generate four haploid spermatids which through the process of spermiogenesis are transformed into spermatozoa.

A.2. b. Cleavage occurs within the fallopian tube and is holoblastic, dividing the zygote completely into blastomeres. The first cleavage divides the zygote longitudinally into two blastomeres wherein one is slightly larger than the other.

Q.3. Why does corpus luteum stay active throughout pregnancy and in the absence of fertilization, is active only for 10-12 days?
A.3. During the luteal phase, the leftover parts of Graafian follicle transform into the corpus luteum. It discharges large quantities of progesterone hormone which is required for the maintenance of the endometrium. The endometrium is important for implantation of the fertilized egg and various other stages of pregnancy. Hence corpus luteum has a long life in pregnancy. In the absence of fertilization, upholding of the corpus luteum is not required and thus it declines within 10-12 days, which causes the lining of the endometrium to menstruate and hence the onset of the new menstrual cycle.

Q.4. What is foetal ejection reflex? How does it cause parturition?

A.4. Foetal ejection reflex is the mild uterine contractions that arise from the parturition signals from the fully developed fetus and the placenta. This reflex stimulates the release of oxytocin, which causes uterine contractions, in turn, stimulating the increased secretion of oxytocin. This action of uterine contractions

and oxytocin secretion further results in stronger contractions leading to the dilation and hence expulsion of the baby out of the uterus through the cervical canal, expelling placenta along, thus the parturition or childbirth.

Q.5. What are the functions of placenta other than its endocrine function?

A.5. The placenta promotes the supply of nutrients and oxygen to the embryo. It also facilitates the elimination of excretory wastes and carbon dioxide produced by the embryo. Placenta aids in the transportation of substances to and from the embryo as it is connected to the embryo through the umbilical cord.

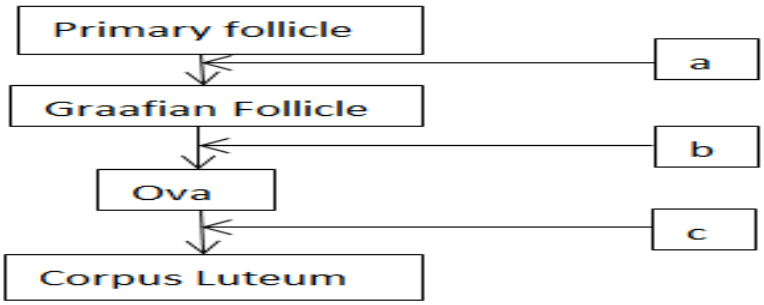
Q.6. Why is breastfeeding recommended during the initial stages of infant growth?

A.6. The mammary glands in females start producing milk towards the end of pregnancy through the process of lactation which helps the mother feed the newborn. Colostrum is the milk produced during the initial few days. Colostrum contains antibodies which are crucial in developing resistance in the newborns hence it is recommended by doctors to bring up a healthy baby.

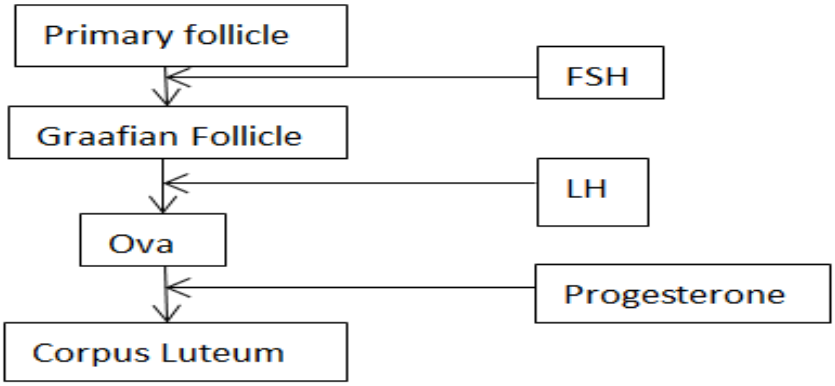
Q.7. What are the different stages of the follicular phase of the menstrual cycle taking place in ovary and uterus?

A.7. In this phase, primary follicles transform into the fully mature Graafian follicle in the ovary. The endometrium of the uterus simultaneously regenerates through proliferation. Changes in the levels of ovarian and pituitary hormones induce changes in the uterus and ovaries. During this stage, the secretion of FSH and LH eventually increases and triggers the secretion and follicular development of estrogen by the growing follicles. In the middle of the cycle, both LH and FSH reach the peak level. This speedy secretion of LH at the maximum level during the mid-cycle causes rupture of Graafian follicle and hence ovulation.

Q.8. Mention the names of the hormones responsible for ovarian changes during the menstrual cycle in the boxes provided.

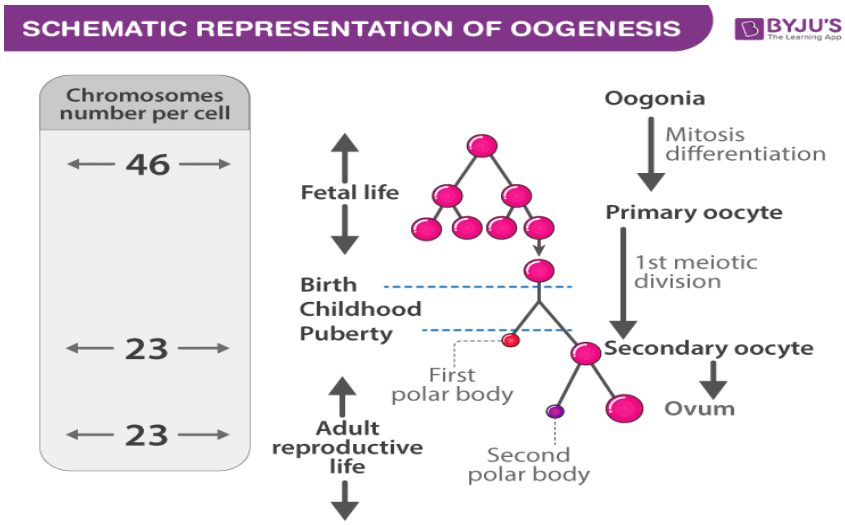


A.8. Hormones responsible for the various stages of the menstrual cycle are:



Q.9. Draw a schematic diagram depicting oogenesis. (Label without description)

A.9.



Q.10. Mention the changes taking place during the transition of a primary follicle to Graafian follicle in the oogonia.

A.10. Oogonia or the gamete mother cells are formed within each fetal ovary. No more oogonia are formed after birth. They enter into the prophase-I stage of meiotic division when they start cell division to approach the primary oocyte stage. These primary oocytes are girdled by a layer of granulosa cells to form the primary follicle which degenerates during the stages of birth to puberty. The primary follicles are encircled by more layers of granulosa cells and a new theca known as secondary follicles. The theca is subdivided into other *theca externa* and an inner *theca interna* which secretes estrogen. The secondary follicle is then transformed into a tertiary follicle characterized by antrum, which is a fluid-filled cavity. At this phase, the primary oocyte grows in size inside the tertiary follicle to complete the first meiotic division. The tertiary follicle finally transitions to form the Graafian follicle.

Q.10. Define Parturition?

A.10. Parturition refers to a process of delivering a baby from the uterus to the vagina to the outside world. There are three stages of Parturition:

1. Dilation.
2. Expulsion.
3. Placental.

Q.11. Define Fertilization?

A.11. Fertilization refers to the biological process of fusion of male and female gametes resulting in the formation of a zygote. In humans, the fertilization process takes place in the fallopian tube.

Q.12. Write the main functions each of testis and ovary?

A.12. Testis also called as the Testicles. It is a pair of oval-shaped organs masked in a pouch called the scrotum. They are responsible for the production of sperms and the male hormone testosterone.

The ovary is a ductless reproductive gland, which functions by producing a female sex hormone called estrogen and also involved in producing and storing the ovum or the egg cell.

Long Answer Type Questions

Q.1. Explain the role of pituitary gonadotropins during the follicular and ovulatory phases of the menstrual cycle. Describe the shifts in steroidal secretions.

A.1. The menstrual flow is due to the breakdown of the lining of the uterine endometrium and blood vessels which forms the liquid discharged from the vagina. The menstrual cycle is controlled through the pituitary gland by the hypothalamus. Changes in the ovary and uterus during the menstrual cycle is due

to the fluctuation in the levels of ovarian and pituitary hormones. Towards the end of the menstrual phase, the pituitary FSH eventually increases which causes the develop

ment of the follicles inside the ovaries. Both the FSH and LH attain a peak level during the mid of the cycle. This speedy secretion of LH leads to LH surge which induces rupture of the Graafian follicle and hence the ovulation. During the maturation of follicles, more of estrogen is secreted causing a surge in FSH and LH from the anterior pituitary. The LH surge causes ovulation. The LH also induces luteinisation. The LH hormone causes the conversion of the empty follicle into the corpus luteum. The Corpus luteum produces steroidal hormones – progesterone and estrogen. These hormones govern the growth and maintenance of the uterine endometrium for probable implantation.

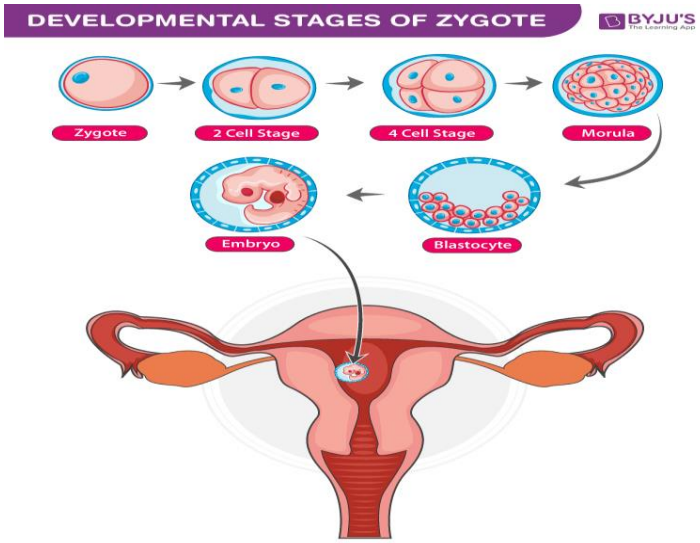
Q.2. Explain in detail the difference between the meiotic division of oogenesis and spermatogenesis.

A.2. Spermatogenesis is the production process of sperm from the male germ cell whereas oogenesis is the production process of the eggs from the oogonia in females. Meiosis is different in spermatogenesis and oogenesis in the quantity of the end product. This unequal division is necessary to maintain the essential part of the cytoplasm. One minor part is detached as the polar body where a single daughter cell called the ovum is formed which is functional. But in spermatogenesis, four spermatids are produced which are functional and that later develops into spermatozoa.

Oogenesis	**Spermatogenesis**
Production of eggs from oogonia	Production of sperm from spermatogonia
Takes place inside the ovary in females	Takes place inside the testes in males
All except the last phase takes place inside the ovary	All phases occur inside the testis
Early stages observed during the fetal period. Rest stages observed between puberty and menopause	A continuous process that is initiated from puberty and lasts until death
Matured from germinal epithelium overlying the ovary	Developed from the germinal epithelial lining of the seminiferous tubules
Sertoli cells not found in germinal cell epithelium	Sertoli cells found in germinal cell epithelium
Few oogonia divide to produce eggs, one at a time	Spermatogonia are divided by meiosis to produce sperms
Lengthy growth phase in oogonia	The growth phase of spermatogonia is short
Generates non-motile gametes	Produces motile gametes
Primary oocyte divides to form a secondary oocyte and polar body during meiosis-I	During meiosis-I, primary spermatocyte divides to form two secondary spermatocytes

Q.3. Explain in detail the various developmental stages of the zygote until implantation with suitable diagrams.

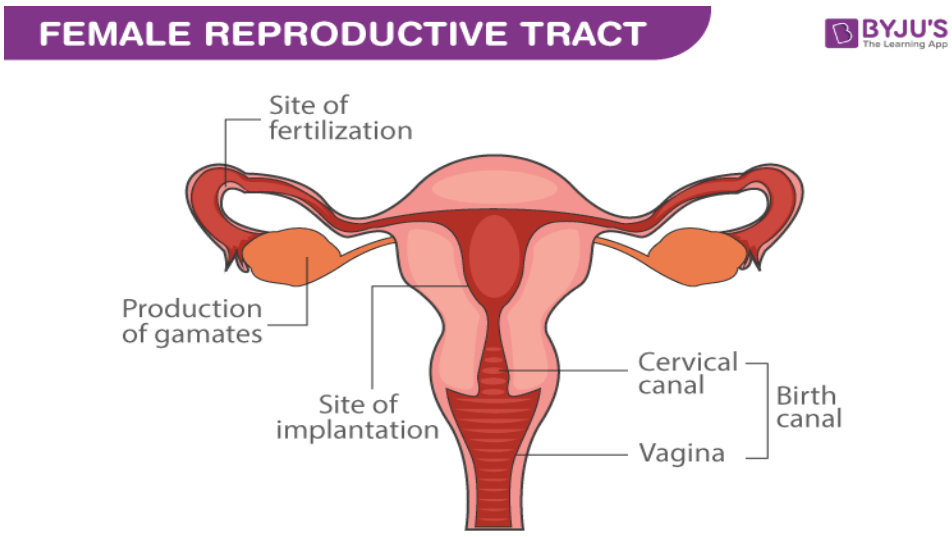
A.3. When the zygote moves through the isthmus of the oviduct, the mitotic division is initiated and is called the cleavage towards the uterus to form 2,4,8,16 daughter cells called blastomeres. It is an embryo containing 8 to 16 blastomeres from the morula. It continues to transform and divide into blastocysts as it further approaches the uterus. In the blastocyst, the blastomeres are organized into an outer layer referred to as the trophoblast and the inner cell mass, which is an inner collection of cells attached to the trophoblast. This layer gets attached to the endometrium and the inner cell mass transforms into the embryo. After attachment, the cells of the uterus rapidly divide and covers up the entire blastocyst. This causes the blastocyst to implant in the endometrium of the uterus which leads to conception.



Q.4. With the help of a neat labelled diagram of the female reproductive system, depict the following sites:

(a)production of gamete
(b)site of fertilization
(c)site of implantation
(d)birth canal

A.4.



Q.5. What is Reproduction? Explain How do humans reproduce their young ones?

A.5. Reproduction is a biological process of producing young ones or offspring, which are identical to their parents. There are two different modes of reproduction and are classified mainly based on the involvement of the parents.

The two different modes of reproduction are:

Asexual Reproduction: This mode of reproduction involves only one parent and the new offspring produced is genetically similar to the parent.

Sexual Reproduction: This mode of reproduction involves the formation and transfer of gametes, followed by fertilization, the formation of the zygote, and embryogenesis. It is very complex.

Humans reproduce their young ones through the sexual mode of reproduction.

Q.6. How many eggs does a woman have?
A.6. As a fetus early in development, a female produces about 6 million to 7 million eggs.

At birth, there are approximately 1 million eggs. By the time of puberty, only about 300,000 remains. Out of these, only 200 to 300 will be ovulated during a woman's reproductive lifetime. Fertility can drop as a woman ages due to decreasing number and quality of the remaining eggs.

Q.7. What is the female reproductive system?

A.7. The female reproductive system includes both the internal and external organs. These organs are mainly involved with the reproduction process.

- **Internal Reproductive Organs**

The internal reproductive organs of females include the vagina, uterus (womb), cervix, fallopian tubes and ovaries.

- **External Reproductive Organs**

The vulva consists of all of the external parts of females reproductive organs.

Q.8.What is Menopause?

A.8. Menopause is defined as the final stage or the end of a woman's menstrual cycle, fertility and the different types of changes a woman experiences. This is a natural process in all females and happens in all elder women's, between the age of 40s to 50s and may also vary. The main cause for the menopause is the female sex hormone levels, which naturally reduces along with the age and eventually ovaries stop releasing the eggs. Therefore, women's in this phase are no longer have periods or be able to get pregnant.

Q.9.What is the menstrual cycle? Name the Hormones, which controls the menstrual menstrual cycle.

A.9. The menstrual cycle is defined as the natural process, which occurs in all females after reaching the age of their puberty. During this period, an ovary releases a mature egg, which travels to the uterus, if the egg is not fertilized, the uterine lining sheds and a new cycle begin. Overall a menstrual cycle lasts for 28 days. This cycles may either last for 21 days or as long as 35 days in some individuals.

The entire process of the menstrual cycle is controlled by the endocrine system and the hormones involved are FSH, LH, estrogen, and progesterone. Both FSH and LH hormones are produced by the gonadotropic cells and progesterone hormones are produced by the ovaries.

ECONOMICS

Assignment 1

Attempt all Questions of the Question Bank shared below. All Questions are Objective Type Questions and need to be answered in not more than one line.

Chapter 1 :: Indian Economy On The Eve of Independence :: Question Bank

Question 1. Name the popular fields of Indian handicrafts industry.
Question 2. Where was the muslin type of cotton textile found in India?
Question 3. What was the state of country's real output during the first half of the twentieth century?
Question 4. What was the major occupation in India on the eve of independence?
Question 5. Name any two commercial crops.
Question 6. What do you mean by stagnant agriculture?
Question 7. Define subsistence agriculture.
Question 8. Name the industries which were in operation in our economy at the time of independence.
Question 9. When and where was the first iron and steel company established?
Question 10. What was the impact of decline of the indigenous handicraft industries?
Question 11. Name two items each of export and import during British rule.
Question 12. Name the countries with which India used to trade during British Rule.
Question 13. What was the aim of the policies pursued by the British during colonial rule?

Chapter 2 :: Indian Economy :: 1950 to 1990 :: Question Bank

Question 1. List the different types of economic systems.
Question 2. What is capitalism?
Question 3. What is mixed economy?
Question 4. Define socialism.
Question 5. What type of economic system does India have?
Question 6. Name the plan formulating organisation in India.
Question 7. When was the Planning Commission constituted?
Question 8. Who is the Chairman of Planning Commission?
Question 9. Which institution has replaced the Planning Commission?
Question 10. Define economic planning.
Question 11. Who is regarded as the architect of Indian Planning?
Question 12.Who established the Indian Statistical Institute?
Question 13. Define land reforms.
Question 14. What is meant by land ceiling?
Question 15. What do you mean by Small Scale Industries?
Question 16. How many industries were reserved for public sector under Industrial Policy Resolution, 1956?
Question 17. When was licensing started in India?
Question 18. What is import substitution?

Chapter 3 :: Liberalisation, Privatisation and Globalisation: An Appraisal :: Question Bank

Question 1.When were economic reforms introduced in India?
Question 2. List any two reasons which led to economic reforms in India.
Question 3. What are the three broad components of New Economic Policy, 1991?
Question 4. Define liberalisation.
Question 5. State any two reforms introduced under liberalisation.
Question 6. What is fiscal policy?
Question 7. Define direct tax. Give two examples.
Question 8.Define indirect tax. Give two examples.
Question 9. What was the consequence of devaluation of rupee?
Question 10. List the aims of trade policy reforms.
Question 11. For what categories of products was industrial licensing not abolished?
Question 12. Define privatisation.
Question 13. What is disinvestment?
Question 14. State the purpose for undertaking disinvestment.
Question 15. Define globalisation.
Question 16. What is outsourcing?
Question 17. List a few services which are being outsourced by companies in developed countries to India.

Question 18. How are WTO and GATT related?
Question 19. Where is the headquarters of WTO?
Question 20. Name the sector that benefited the most with the introduction of economic reforms in India.
Question 21. Define GST.
Question 22. Why is GST implemented?
Question 23. When was GST implemented in India?
Question 24. Who is the head of the GST Council?
Question 25.Which constitutional amendment is done to pass the GST bill?
Question 26. What is demonetisation?
Question 27. When did demonetisation take place in India?
Question 28. What was main motive behind demonetisation?
Question 29. When did demonetisation take place in India for the first time in history?
Question 30. What was the last date of tendering old currency?

Chapter 4 :: Poverty In India :: Question Bank
Question 1. What do you mean by poverty?
Question 2. What proportion of the world's poor live in India?
Question 3. How many children under the age of five die annually in India according to UNICEF?
Question 4. Name the two key features of poorest households.
Question 5. What are the factors responsible alarming malnutrition among the poor?
Question 6. Define poverty line.
Question 7. Name the two types of poverty.
Question 8. Define absolute poverty.
Question 9. What is relative poverty?
Question 10. State the minimum calorie requirement (per day) of a person in rural area and a person in urban area
Question 11. How is the extent of poverty worked out in India?
Question 12. Define Head Count Ratio.
Question 13. Name the state in India which had the highest poverty in 2011-2012.
Question 14. Give two examples of self-employment programmes initiated by the government to alleviate poverty.
Question 15. Name the three major programmes that aim at improving the food and nutritional status of the poor.
Chapter 5 :: Human Capital Formation In India :: Question Bank
Question 1. Define human capital.
Question 2. List the sources of human capital.
Question 3. Why do individuals invest in education?
Question 4. What is the main reason for rural-urban migration?
Question 5. Define physical capital.
Question 6. Define economic growth.
Question 7. List the indicators of educational achievement in a country.
Question 8. What are the indicators used to measure the health status of a country?
Question 9. What percentage was set as the goal for expenditure on education?
Question 10. What is the present literacy rate of India?
Question 11. Name the institutions that regulate the education sector in India.
Question 12.Which institutions regulate health sector in India?
Question 13. What was the rate of unemployment among rural youth female with education up to secondary level and above, as per NSSO data in the year 2011-12?
Question 14. What was the rate of unemployment among youth with education up to primary level, as per NSSO data in the year 201 1-12?
Question 15. Why is the level of unemployment is the highest among educated youth?

Assignment 2

Prepare a comprehensive project based on the following CBSE guidelines / expectations:

- Introduction of topic/title
- Identifying the causes, consequences and/or remedies
- Various stakeholders and effect on each of them
- Advantages and disadvantages of situations or issues identified
- Short-term and long-term implications of economic strategies suggested in the course of research
- Validity, reliability, appropriateness and relevance of data used for research work and for presentation in the project file
- Presentation and writing that is succinct and coherent in project file
- Citation of the materials referred to, in the file in footnotes, resources section, bibliography etc.

Following is a list of suggested topics:

Class XII	
• Micro and Small Scale Industries	• Food Supply Channel in India
• Contemporary Employment situation in India	• Disinvestment policy of the government
• Goods and Services Tax Act and its Impact on GDP	• Health Expenditure (of any state)
• Human Development Index	• Inclusive Growth Strategy
• Self-help group	• Trends in Credit availability in India
• Monetary policy committee and its functions	• Role of RBI in Control of Credit
• Government Budget & its Components	• Trends in budgetary condition of India
• Exchange Rate determination – Methods and Techniques	• Currency War – reasons and repercussions
• Livestock – Backbone of Rural India	• Alternate fuel – types and importance
• Sarwa Siksha Abhiyan – Cost Ratio Benefits	• Golden Quadrilateral- Cost ratio benefit
• Minimum Support Prices	• Relation between Stock Price Index and Economic Health of Nation
• Waste Management in India – Need of the hour	• Minimum Wage Rate – approach and Application
• Digital India- Step towards the future	• Rain Water Harvesting – a solution to water crises
• Vertical Farming – an alternate way	• Silk Route- Revival of the past
• Make in India – The way ahead	• Bumper Production- Boon or Bane for the farmer
• Rise of Concrete Jungle- Trend Analysis	• Organic Farming – Back to the Nature
• Any other newspaper article and its evaluation on basis of economic principles	• **Any other topic**

PHYSICS

1 Mark Questions:

Q.1. State the reason, why GaAs is most commonly used in making of a solar cell.

Q.2. Two conducting wires X and Y of same diameter but different materials are joined in series across a battery. If the number density of electrons X is twice that in Y, find the ratio of drift velocity of electrons in the two wires.

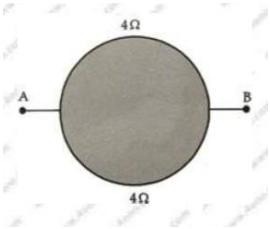
Q.3. Two wires of equal length, one of copper and the other of manganin have the same resistance. Which wire is thicker?

Q.4. Using the concept of force between two infinitely long parallel current carrying conductors, define one ampere of current.

Q.5. Nichrome and copper wires of same length and same radius are connected in series. Current 'I' is passed through them. Which wire gets heated up more? Justify your answer.

Q.6. A resistance R is connected across a cell of emf ε and internal resistance r. A potentiometer now measures the potential difference between the terminals of the cell as V. Write the expression for 'r' in terms of ε, V and R.

Q.7. A wire of resistance 8R is bent in the form of a circle. What is the effective resistance between the ends of a diameter AB?



Q.8. When electrons drift in a metal from lower to higher potential, does it mean that all the free electrons of the metal are moving in the same direction?

Q.9. Show a graph, the variation of resistivity with temperature for a typical semiconductor?

Q.10. A 10 V battery of negligible internal resistance is connected across a 200 V battery and a resistance of 38 Ω as shown in the figure. Find the value of the current in circuit.

Q.11. The emf of a cell is always greater than its terminal voltage. Why? Give reason.

Q.12. Define the term 'Mobility' of charge carriers in a conductor. Write its S.I. unit.

Q.13. Show variation of resistivity of copper as a function of temperature in a graph.

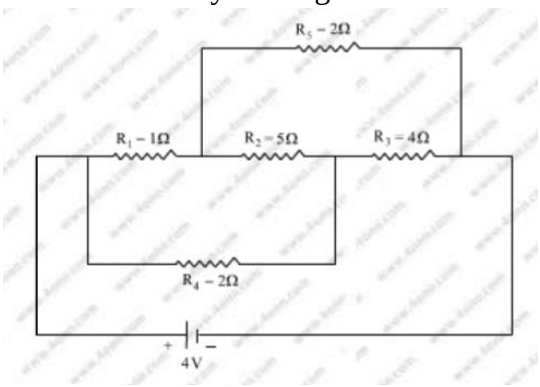
Q.14. A long straight current carrying wire passes normally through the center of circular loop. If the current through the wire increases, will there be an induced emf in the loop? Justify.

2 Mark Questions:

Q.15. Two metallic wires of the same material have the same length but cross-sectional area is in the ratio 1:2 they are connected (i) in parallel. Compare the velocities of electrons in the two wires in both the cases (i) and (ii).

Q.16. Derive an expression for the resistivity of a good conductor, in terms of the relaxation time of electrons.

Q.17. Calculate the current drawn from the battery in the given network.



Q.18. How does the resistivity of a conductor depend upon temperature electrical conductivity?

Q.19. A wire of 15 ohm resistances is gradually stretched to double its original length. It is then cut into two equal parts. These parts are then connected in parallel across a 3.0 volt battery. Find the current down from the battery.

Q.20. In the given circuit, assuming point A to be at zero potential, use Kirchhoff's rules to determine the potential at point B.

Q.21. In the meter bridge experiment, balance point was observed at J with AJ = l. (i) The values of R and X were doubled and then interchanged. What would be the new position of balance point? (ii) If the galvanometer and battery are interchanged at the balance position, how will the balance point get affected?

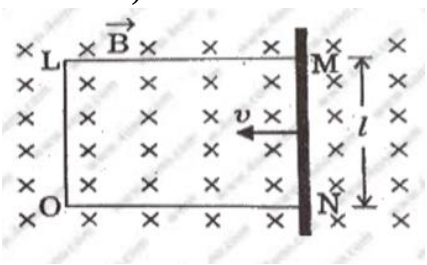
Q.22. A light bulb is rated 100 W for 220 V ac supply of 50 Hz. Calculate (i) the resistance of the bulb; (ii) the rms current through the blub.

Q.23. An alternating voltage given by V- 140 sin 314 is connected across a pure resistor of **50 Ω**.Find (i) the frequency of the source. (ii) the rms current through the resistor.

Q.24. Explain the term ‘drift velocity’ in a conductor. Hence obtain the expression for the current through a conductor in terms of ‘drift velocity’.

Q.25. Describe briefly, with the help of a circuit diagram, how a potentiometer is used to determine the internal resistance of a cell.

Q.26. A rectangular conductor LMNO is placed in a uniform magnetic field of 0.5T. The field is directed perpendicular to the plane of the conductor. When the arm MN of length of 20 cm is moved towards left with a velocity of $\mathbf{10ms^{-1}}$, calculate the emf induced in the arm. Given the resistance of the arm to be $5\boldsymbol{\Omega}$ (assuming that arms are of negligible resistance) find the value of the current in the arm.



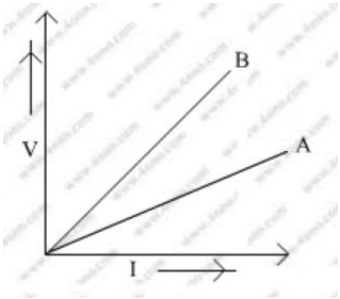
Q.27. A wheel with 8 metallic spokes each 50 cm long is rotated with a speed of 120 rev/min in a plane normal to the horizontal component of the Earth's magnetic field. The Earth's magnetic field at the place is 0.4 G and the angle of dip is 600. Calculate the emf induced between the axle and the rim of the number of spokes were increased?

Q.28. A cell of emf 'E' and internal resistance 'r' is connected across a variable resistor 'R'. Plot a graph showing variation of terminal voltage 'V' of the cell versus the current 'I'. using the plot, show how the emf of the cell and its internal resistance can be determined.

Q.29. Estimate the average drift speed of conduction electrons in a copper wire of cross-sectional area $\mathbf{1.0 \times 10^{-7}\ m^2}$ carrying a current of $\mathbf{1.5 \times 10^{-19}}$ A. Assume the density of conduction electrons to be $\mathbf{9 \times 10^{28}\ m^{-3}}$.

Q.30. Derive an expression for drift velocity of free electrons in a conductor in terms of relaxation time.

Q.31. V-1 Graph for parallel and series combination of two metallic resistors are shown in adjoining figure. Which graph represents parallel combination?



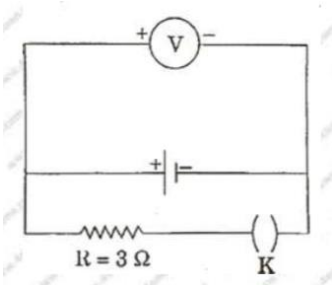
Q.32. A cell of $\boldsymbol{emf}$ E and internal resistance r is connected to two external resistances R_I and R_2 and a perfect ammeter. The current in the circuit is measured in four different situations: (i) without any external resistance in the circuit (ii) with resistance R_I only (iii) with R_I and R_2 in series combination (iv) with R_I and R_2 in parallel combination The currents measured in the four cases are 0.42 A, 1.05 A, 1.4 A and 4.2 A, but not necessarily in that order. Identify the currents corresponding to the four cases mentioned above.

Q.33. A metallic rod of 'L' length is rotated with angular frequency of 'w' with one end hinged at the center and the other end at the circumference of a circular metallic ring of radius L, about an axis passing through the center and perpendicular to the plane of the ring. A constant and uniform magnetic field B parallel to the axis is present everywhere. Deduce the expression for the emf between the center and the metallic ring.

3 Mark Questions:

Q.34. (i) State the principle of working of a meter bridge. (ii) In a meter bridge balance point is found at a distance 1 with resistance R and S as shown in the figure. When an unknown resistance X is connected in parallel with the resistance S, the balance point shifts to a distance a $\boldsymbol{l_2}$ find the expression for X terms of $\boldsymbol{l_1}$ $\boldsymbol{l_2}$and S.

Q.35. Write any two factors on which internal resistance of a cell depends. The reading on a high resistance voltmeter, when a cell is connected across it, it 2. 2. V. When the terminals of the cell are also connected to a resistance of 5ohm as shown in the circuit, the voltmeter reading drops to 1. 8V. Find the internal resistance of the cell.



Q.36. State Kirchhoff's rules. Use these rules to write expressions for the currents $\boldsymbol{I_i}$, $\boldsymbol{I_2}$and $\boldsymbol{I_3}$in the circuit diagram shown.

Q.37. Two heating elements of resistances $\boldsymbol{R_1}$ and $\boldsymbol{R_2}$ when operated at a constant supply of voltage, V, consume powers $\boldsymbol{P_1}$ and $\boldsymbol{P_2}$ respectively. Deduce the expressions for the power of their combination when they are, in turn, connected in (i) series and (ii) parallel across the same voltage supply.

Q.38. Define relaxation time of the free electrons drifting in conductor. How is it related to the drift velocity of free electrons? Use this relation to deduce the expression for the electrical resistivity of the material.

Q.39. A wire AB is carrying steady current of 12 A and is lying on the table. Another wire CD carrying is held directly above AB at a height of 1 mm. Find the mass per unit length of the wire CD so that it remains suspended at its position when left free. Give the direction of the current flowing in CD with respect to that in AB. [Take the value of $\boldsymbol{g} = \boldsymbol{10\ ms^{-2}}$].

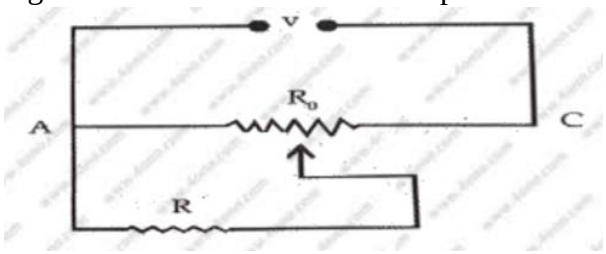
Q.40. Answer the following:

(a) Why are the connections between the resistors in a meter bridge made of thick copper strips?

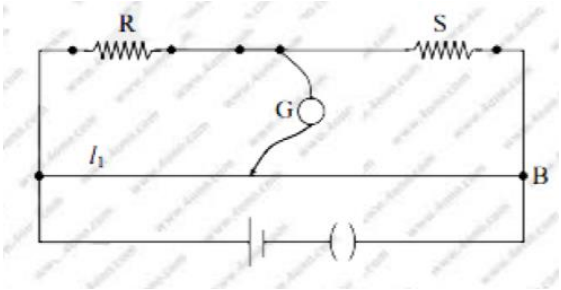
(b) Why is it generally preferred to obtain the balance point in the middle of the meter bridge wire?

(c) Which material is used for the meter bridge wire and why.

Q.41. A resistance of R Ω draws current from a potentiometer, as shown in the figure. The potentiometer has a total resistance $\boldsymbol{R0}$ Ω. A voltage V is supplied to the potentiometer. Drive an expression for the voltage across R when the sliding contact is in the middle of the potentiometer.



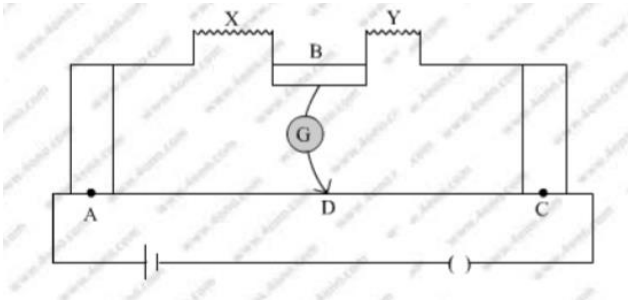
Q.42. (a) Write the principle of working of a meter bridge. (b) In a meter bridge, the balance point is formed at a distance $\boldsymbol{l_i}$ with resistances R and S as shown in the figure. An unknown resistance X is now connected in parallel to the resistance S and the balance point is found at a distance l_2. Obtain a formula for X in terms of$\boldsymbol{l_i}$, $\boldsymbol{l_2}$and S.



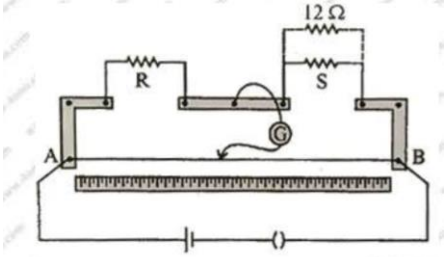
Q.43. An air solenoid of length 0.3m, area of cross section is 1.2 x $\boldsymbol{10^{-3}m^2}$and has 2500 turns. Around its central section, a coil of 350 turns is wound. The solenoid and the coil are electrically insulated from each other. Calculate the emf induced in the coil if the initial current of 3A in the solenoid is reversed in 0.25s.

Q.44. The figure shows experimental set up of a meter bridge. When the two unknown resistances X and Y are inserted, the null point D is obtained 40cm from the end A. When a resistance of 10**Ω** is conected. Q is connected in series with X, the null point shifts by 10 cm. Find the position of the null point when the 10**Ω**

resistance is instead connected in series with. resistance 'Y'. Determine the values of the resistances X and Y.

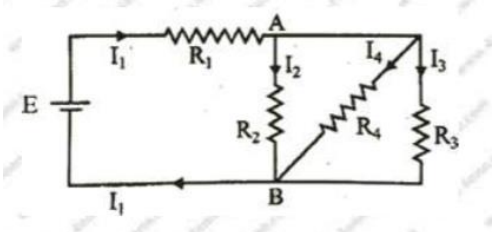


Q.45. In a meter bridge, the null point is found at a distance of 40 cm from A. If a resistance of 12 Ω is connected in parallel with S, the null point occurs at 50.0 cm from A. Determine the values of R and S.

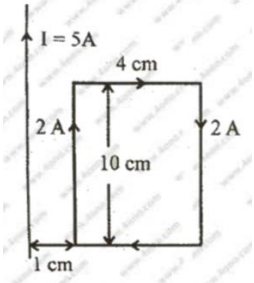


Q.46. Define the terms (i) drift velocity, (ii) relaxation time. A conductor of length L is connected to a dc source of emf ε. If this conductor is replaced by another conductor of same material and same area of cross-section but of length 3L, how will the drift velocity change?

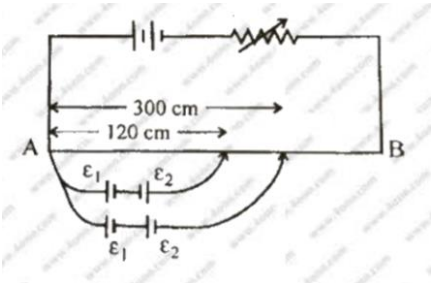
Q.47. In the circuit shown, $\boldsymbol{R1}$ = 4 Ω, $\boldsymbol{R2}$ = $\boldsymbol{R3}$ = 15 Ω, $\boldsymbol{R1}$ = 30 Ω and E = 10 V. Calculate the equivalent resistance of the circuit and the current in each resistor.



Q.48. A rectangular loop of wire of size $\boldsymbol{4\ cm \times 10\ cm}$ carries a steady current of 2A. A straight long wire carrying 5A current is kept near the loop as shown. If the loop and the wire are coplanar, find (i) the torque acting on the loop. (ii) the magnitude and direction of the force on the loop due to current carrying wire.

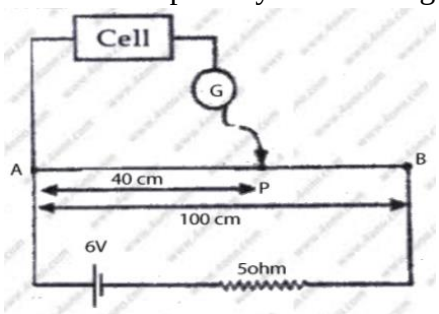


Q.49. In the figure a long uniform potentiometer wire AB is having a constant potential gradient along its length. The null points for the two primary cells of emf's $\boldsymbol{\varepsilon_1}$ and $\boldsymbol{\varepsilon_2}$ connected in the manner shown are obtained at a distance of 120cm and 300 cm from the end A. Find **(i)** $\frac{\epsilon_1}{\epsilon_2}$ (ii) position of null point for the cell $\boldsymbol{\varepsilon_1}$. How is the sensitivity of a potentiometer is increased?

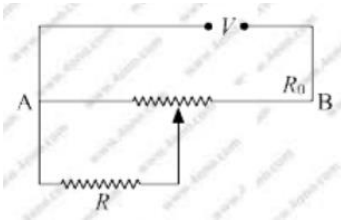


Q.50. Using Kirchhoff's rules determine the value of unknown registers R in the circuit so that no current flows through 4ohm resistance. Also find the potential difference between A and D.

Q.51. A potentiometer wire of length 1 m has a resistance of 10**Ω**. It is connected to a 6V battery in series with a resistance of 5**Ω**. Determine the emf of the primary cell which gives a balance point at 40cm.



Q.52. A resistance of R draws current from a potentiometer. The potentiometer wire, AB, has a total resistance of Ro. A voltage V is supplied to the potentiometer. Derive an expression for the voltage across R when the sliding contact is in the middle of potentiometer wire.

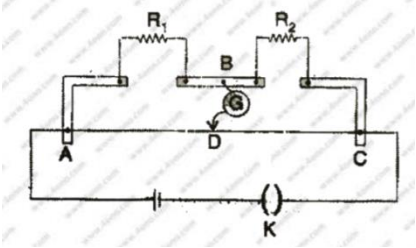


Q.53. (a) Define the term 'conductivity' of a metallic wire. Write its SI unit. (b) Using the concept of free electrons in a conductor, derive the expression for the conductivity of a wire in terms of number density and relaxation time. Hence obtain the relation between current density and the applied electric field E.

5 Marks Questions:

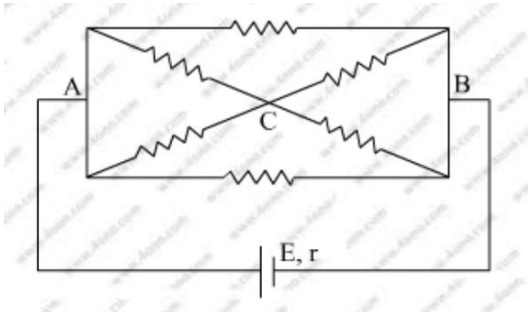
Q.54. (a) State the working principle of a potentiometer. With the help of the circuit diagram, explain how a potentiometer is used to compare the emfs of two primary cells. Obtain the required expression used for comparing the emfs. (b) Write two possible causes for one-sided deflection in a potentiometer experiment.

Q.55. (a) State Kirchhoff's rules for an electric network. Using Kirchhoff's rules, obtain the balance condition in terms of the resistances of four arms of Wheatstone bridge. (b) In the meter bridge experimental set up, shown in the figure, the null point 'D' is obtained at a distance of 40 cm from end A of the meter bridge wire. If a resistance of 10Ω is connected in series with R_1, null point is obtained at AD=60 cm. Calculated the values of R_1 and R_2.



Q.56. (i) Derive an expression for drift velocity of electrons in a conductor. Hence deduce Ohm's law.
(ii) A wire whose cross-sectional area is increasing linearly from its one end to the other, is connected across a battery of V volts. Which of the following quantities remain constant in the wire? (a) drift speed (b) current density (c) electric current (d) electric field.

Q.57. (i) State the two Kirchhoff's laws. Explain briefly how these rules are justified. (ii) The current is drawn from a cell of emf E and internal resistance r connected to the network of resistors each of resistance r as shown in the figure. Obtain the expression for (i) the current draw from the cell and (ii) the power consumed in the network.



CHEMISTRY

A. ALKYL AND ARYL HALIDES

1 **Give IUPAC names of the following compounds. Also, classify them into primary, secondary and Tertiary Alkyl/Aryl/Benzyl/Vinyl Halide :**

(a) $(CH_3)_3C$-Cl

(b) n-Propyl iodide

(c) m-Tolyl chloride

(d) p-Dibromobenzene

(e) $C_6H_5CH_2CH_2Cl$

(f) iso-Propyl bromide

2 **Fill in the following blanks :**

1. **A** $\xrightarrow{\text{aq NaOH}}$ **B** (A ketone) $\xrightarrow{\text{I2 / NaOH}}$ CHI$_3$ + Sodium propanoate

2. **A** $\xrightarrow{\text{KI/H3PO4}}$ **B** $\xrightarrow{\text{NH3}}$ **C** $\xrightarrow{\text{CHCl3/alc KOH, Δ}}$ n-Propyl isocyanide

3. Ethane $\xrightarrow{\text{A}}$ **B** $\xrightarrow{\text{C}}$ CH_3MgCl $\xrightarrow{\text{H2O}}$ **D** + Mg(OH)Cl

4. **A** + HBr $\rightarrow$ 2-Bromopentane $\xrightarrow{\text{B}}$ 2-Pentene $\xrightarrow{\text{HBr}}$ **C** $\xrightarrow{\text{Na / DE}}$ **D** $\rightarrow$

3 **How will you convert :**

(a) Ethanol into 2-Pentyne (in two steps)

(b) n-Propyl bromide into iso-Propyl alcohol

(c) iso-Propyl alcohol into n-Hexane

(d) Benzene into Benzyl alcohol

(e) 4-Aminophenol into 1,4-Benzenediol

4 **Which of the following will give positive iodoform test :**

(a) n-Butyl alcohol

(b) 2-Methylcyclohexanone

(c) sec-Butyl alcohol

(d) Propanal

(e) t-Butyl alcohol

(f) Propanone

(g) 1-Phenyl ethanol

(h) 3-Pentanone

(i) Ethanal

(j) Cyclohexanone

ACCOUNTANCY

ACCOUNTING FOR PARTNERSHIP FIRMS: BASIC CONCEPTS

Q.1 State the conditions under which capital balances may change under the system of a Fixed Capital Account.

Q.2 A is partner in a firm. His capital as on Jan 01, 2007 was Rs. 60,000. He introduced additional capital of Rs. 20000 on Oct 01 2007. Calculate interest on A's capital @ 9% p.a.

Q.3 Alka, Barkha and Charu are partners in a firm having no partnership agreement. Alka, Barkha and Charu contributed Rs. 20,000, Rs. 30,000 and Rs. 1,00,000 respectively. Alka and Barkha desire that the profit should be divided in the ratio of capital contribution. Charu does not agree to this. How will you settle the dispute.

Q.4 A and B are partners in a firm without a partnership deed. A is an active partner and claims a salary of Rs. 18,000 per month. State with reason whether the claim is valid or not.

Q.5 Chandar and Suman are partners in a firm without a partnership deed. Chandar's capital is Rs. 10,000 and Suman's capital is Rs. 14,000. Chander has advanced a loan of Rs. 5000 and claim interest @ 12% p.a. State whether his claim is valid or not.

Q.6 R, S, and T entered into a partnership of manufacturing and distributing educational CD's on April 01, 2006. R looked after the business development, S content development and T financed the project. At the end of the year (31-03-2007) T wanted an interest of 12% on the capital employed by him. The other partners were not inclined to this. How would you resolve this within the ambit of the Indian Partnership Act, 1932?

Q.7 A, B and C are partners in a firm. A withdrew Rs. 1000 in the beginning of each month of the year. Calculate interest on A's drawing @ 6% p.a.

Q.8 A, B and C are partners in a firm, B withdrew Rs. 800 at the end of each month of the year. Calculate interest on B's drawings @ 6% p.a.

Q.9 A, B and C are partners in a firm. They have omitted interest on capital @ 10 % p.a. for three years ended 31st march 2007. Their fixed capitals on which interest was to be calculated through –out were

A	Rs. 1,00,000
B	Rs. 80,000
C	Rs. 70,000

Give the necessary Journal entry with working notes.

Q.10 X, Y, and Z are partners sharing profits and losses in the ratio of 3:2:1. After the final accounts have been prepared it was discovered that interest on drawings @ 5 % had not been taken into consideration. The drawings of the partner were X Rs. 15000, Y Rs. 12,600, Z Rs. 12,000. Give the necessary adjusting Journal entry.

Q.11 A, B and C are partners sharing profits and losses in the ratio of 3:2:1. Their fixed capitals are Rs. 1,50,000, Rs. 1,00,000 and Rs. 80,000 respectively. Profit for the year after providing interest on capital was Rs. 60,000, which was wrongly transferred to partners equally. After distribution of profit it was found that interest on capital provided to them @ 10% instead of 12% . Pass necessary adjustment entry.

Show your working clearly.

Q.12 Ravi and Mohan were partner in a firm sharing profits in the ratio of 7:5. Their respective fixed capitals were Ravi Rs. 10,00,000 and Mohan Rs. 7,00,000. The partnership deed provided for the

following:-

(i) Interest on capital @ 12% p.a.

(ii) Ravi's salary Rs. 6000 per month and Mohan's salary Rs. 60000 per year.

The profit for the year ended 31-03-2007 was Rs. 5,04,000 which was distributed equally without providing for the above. Pass an adjustment Entry.

Q.13 Distinguish between fixed capital method and fluctuating capital method.

Q.14 A, B and C were partners in a firm having capitals of Rs. 60,000, Rs. 60,000 and Rs. 80,000 respectively. Their current account balances were A- Rs. 10,000, B- Rs. 5000 and C- Rs. 2000 (Dr.). According to the partnership deed the partners were entitled to an interest on capital @ 5% p.a. C being the working partner was also entitled to a salary of Rs. 6,000 p. a. The profits were to be divided as follows:

(i) The first Rs. 20,000 in proportion to their capitals.

(ii) Next Rs. 30,000 in the ratio of 5:3:2.

(iii) Remaining profits to be shared equally.

During the year the firm made a profit of Rs. 1,56,000 before charging any of the above items. Prepare the profit and loss appropriate on A/C.

Q.15 A and B are partners sharing profits in proportion of 3:2 with capitals of Rs. 40,000 and Rs. 30,000 respectively. Interest on capital is agreed at 5 % p.a. B is to be allowed an annual salary of Rs. 3000 which has not been withdrawn. During 2001 the profits for the year prior to calculation of interest on capital but after charging B's salary amounted to Rs. 12,000. A provision of 5% of this amount is to be made in respect of commission to the manager.

Prepare profit and loss appropriation account showing the allocation of profits.

RECONSTITUTION OF PARTNERSHIP

Q.1 On what occasions does the need for valuation of goodwill arise?

Q.2 Why is it necessary to revalue assets and reassess liabilities at the time of admission of new partner?

Q.3 What is meant by sacrificing ratio?

Q.4 State two occasions when sacrificing ratio may be applied.

Q.5 A business has earned average profit of Rs. 60,000 during the last few years. The assets of the business are Rs. 5,40,000 and its external liabilities are Rs. 80,000. The normal rate of return is 10%. Calculate the value of goodwill on the basis of capitalization of super profits.

Q.6 The capital of a firm of Arpit and Prajwal is Rs. 10,00,000. The market rate of return is 15% and the goodwill of the firm has been valued Rs. 1,80,000 at two years purchase of super profits. Find the average profits of the firm.

Q.7 The average profits for last 5 years of a firm are Rs. 20,000 and goodwill has been worked out Rs. 24,000 calculated at 3 years purchase of super profits. Calculate the amount of capital employed assuming the normal rate of interest is 8 %.

Q.8 Rahul and Sahil are partners sharing profits together in the ratio of 4:3. They admit Kamal as a new partner. Rahul surrenders $1/4^{th}$ of his share and Sahil surrenders $1/3^{rd}$ of his share in favour of Kamal. Calculate the new profit sharing ratio.

Q.9 Ajay and Naveen are partners sharing profits in the ratio of 5:3. Surinder is admitted in to the firm for $1/4^{th}$ share in the profit which he acquires from Ajay and Naveen in the ratio of 2:1. Calculate the new profit sharing ratio.

Q.10 A and B were partners sharing profits in the ratio of 3:2. A surrenders $1/6^{th}$ of his share and B surrenders $1/4^{th}$ of his share in favour of C, a new partner. What is the new ratio and the sacrificing ratio.

Q.11 Aarti and Bharti are partners sharing profits in the ratio of 5:3. They admit Shital for $1/4^{th}$ share and agree to share between them in the ratio of 2:1 in future. Calculate new and sacrificing ratio.

Q.12 X and Y divide profits and losses in the ratio of 3:2. Z is admitted in the firm as a new partner with $1/6^{th}$ share, which he acquires from X and Y in the ratio of 1:1. Calculate the new profit sharing ratio of all partners.

Q.13 Rakhi and Parul are partners sharing profits in the ratio of 3:1. Neha is admitted as a partner. The new profit sharing ratio among Rakhi, Parul and Neha is 2:3:2. Find out the sacrificing ratio.

Q.14 X and Y are partners sharing profits in the ratio of 5:4. They admit Z in the firm for $1/3^{rd}$ profit, which he takes $2/9^{th}$ from X and $1/9^{th}$ from Y and brings Rs. 1500 as premium. Pass the necessary Journal entries on Z's admission.

Q.15 Ranzeet and Priya are two partners sharing profits in the ratio of 3:2. They admit Nilu as a partner, who pays Rs. 60,000 as capital. The new ratio is fixed as 3:1:1. The value of goodwill of thefirm was determined at Rs. 50,000. Show journal entries if Nilu brings goodwill for her share in cash.

Q.16 A and B are partners sharing profits equally. They admit C into partnership, C paying only Rs. 1000 for premium out of his share of premium of Rs. 1800 for $1/4^{th}$ share of profit. Goodwill account appears in the books at Rs. 6000. All the partners have decided that goodwill should not appear in the new firms books.

Q.17 A and B are partners sharing profits in the ratio of 3:2. Their books showed goodwill at Rs. 2000. C is admitted with $1/4^{th}$ share of profits and brings Rs. 10,000 as his capital but is not able to bring in cash goodwill Rs. 3000. Give necessary Journal entries.

Q.18 Piyush and Deepika are partners sharing in the ratio of 7:3. they admit Seema as a new partner. The new ratio being 5:3:2. Pass journal entries.

Q.19 A and B are partners with capital of Rs. 26,000 and Rs. 22,000 respectively. They admit C as partner with $1/4^{th}$ share in the profits of the firm. C brings Rs. 26,000 as his share of capital. Give journal entry to record goodwill on C's admission.

Q.20 A and B are partners sharing profits in the ratio of 3:2. They admit C into partnership for $1/4^{th}$ share. C is unable to bring his share of goodwill in cash. The goodwill of the firm is valued at Rs. 21,000. give journal entry for the treatment of goodwill on C's admission.

Q.21 A and B are partners with capitals of Rs. 13,000 and Rs. 9000 respectively. They admit C as a partner with $1/5^{th}$ share in the profits of the firm. C brings Rs. 8000 as his capital. Give journal entries to record goodwill.

Q.22 A, B and C were partners in the ratio of 5:4:1. On 31^{st} Dec. 2006 their balance sheet showed a reserve fund of Rs. 65,000, P&L A/C (Loss) of Rs. 45,000. On 1^{st} January, 2007, the partners decided to change their profit sharing ratio to 9:6:5. For this purpose goodwill was valued at Rs. 1,50,000. The partners do not want to distribute reserves and losses and also do not want to record goodwill.

You are required to pass single journal entry for the above.

Q.23 A and B were partners in the ratio of 3:2. They admit C for $3/13^{th}$ share. New profit ratio after C's admission will be 5:5:3. C brought some assets in the form of his capital and for the share of his goodwill.

Following were the assets:

Assets	Rs.
Stock	2,44,000
Building	2,40,000
Plant and Machinery	1,40,000

At the time of admission of C goodwill of the firm was valued at Rs. 12,48,000.

Pass necessary journal entries.

Q.24 X, Y and Z are sharing profits and losses in the ratio of 5:3:2. They decide to share future profits and losses in the ratio of 2:3:5 with effect from 1^{st} April, 2002. They also decide to record the effect of the reserves without affecting their book figures, by passing a single adjusting entry.

	Book Figure
General Reserve	Rs. 40,000
Profit 2 loss A/C (Cr)	Rs. 10,000
Advertisement Suspense A/C(Dr)	Rs. 20,000

Pass the necessary single adjusting entry

Psychology

CASE PROFILE

Students will need to create a Case Profile of a subject using multiple methods of data collection to gain a deeper understanding of their behaviour. (The subject should be of 15 yrs and above).

The introduction which has to be written in file, interview questions and the questionnaire will be provided.

The interview has to take place through online medium (WhatsApp video call/Zoom call/any other online mode that is convenient).

To ensure the data gathered is sufficient, it is required to use three methods of assessment, namely, Interview, Observations and Psychological Tests.

Students will administer these three tests-

- Maudsley Personality Test
- Self-Concept Questionnaire
- Adjustment Inventory for School Students

Scanned copy of the test will be provided along with the manual and scoring key.

GUIDELINES FOR THE PROJECT FILE (CASE PROFILE)

The students will prepare a project file:

1. COVER PAGE
2. CERTIFICATE
3. ACKNOWLEDGEMENT
4. INDEX
5. INTRIDUCTION TO CASE STUDY- ADVANTAGE, DISADVANTAGES
6. PRECAUTIONS TAKEN – VOLUNTARY PARTICIPATION , INFORMED CONSENT, DEBRIEFING, SHARING OF RESULTS AND CONFIDENTILAITY (REFER TO CLASS XI NCERT TEXTBOOK)
7. TOOLS USED FOR COLLECTING DATA –

OBSERVATION METHOD (EXPLAIN)

INTERVIEW METHOD (EXPLAIN)

PSYCHOLOGICAL TEST (EXPLAIN)

- REFER TO CLASS XI NCERT TEXTBOOK

8. REASONS FOR CHOOSING MY SUBJECT
9. RAPPORTY FORMATION
10. PRELIMINARY INFORMATION:

- NAME
- AGE
- GENDER
- NUMBER OF SIBLINGS
- BIRTH ORDER

- EDUCATION
- LOCALITY OF RESIDENCE
- PARENTAL EDUCATION
- RELIGION
- SUBJECT'S MEDICAL HISTORY

11. INTERVIEW: OF SUBJECTS, HIS/HER PARENTS/FRIENDS/TEACHERS
12. INTERVIEW ANALYSIS (SUMMARY OF RESPONSES YOU'VE RECEIVED)

SUBJECT'S MOTHER INTERVIEW ANALYSIS
SUBJECT'S FATHER INTERVIEW ANALYSIS
SUBJECT'S FRIENDS INTERVIEW ANALYSIS

13. OBSERVATION METHOD : REPORT OF SUBJECT'S OBSERVATION (SHARE HOW HE/SHE IS IN SCHOOL/WITH FRIENDS/ WITH PARENTS ACCORDING TO YOUR OBSERVATION)
14. PSYCHOLOGICAL TESTS: REPORTING OF THE THREE TESTS ADMINISTERED ON THE SUBJECT (ONLY THE RESULT/INTERPRETATION)
15. CUMMULATIVE ANALYSIS
16. BIBLIOGRAPHY

PRESENTATION OF THE FILE:

The Project should include the following details-

a) The total length of the project report should be 20 to 25, pages (excluding diagrams and graphs).

b) The project work should be hand written and credit will be given to original drawing.

c) It should be presented in a neatly bound simple project file.

d) The project should be done in ruled drawing sheets. CASE STUDY The main objective of preparing a case profile is to understand the individual in totality.

*PLEASE NOTE:

Since we have to keep the current situation in consideration, the case study conduction will be done in two parts. Part 1-First you will establish rapport with the individual whom you have chosen for case study (you may or may not disclose their identity). Interview will need to be conducted via online video call only and you will have to make observations and keep a record (notice the verbal and non-verbal cues).

Part 2- can be carried out in the same way as part 1 (here Q/A are more detailed, psychological testing to be administered). Ask the questions with patience and also record the answers and feedback given by the subject.

Thank them for their participation and assure them the results will be shared with them after completion of the study.

All the best! Stay safe and happy.

SOCIOLOGY

1. **Prepare the Practical file for sociology external board practical. Guidelines for which are shared as under:**

Practical File:

a. Prepare a project file (25 sheets approximately, A4 size sheets) on any social issue we are facing in our society or any other social problem.
b. Carry out a research in a detailed manner using 20 interviews, questionnaire, direct or indirect observation.
c. The file should contain all the necessary sub-topics including analysis.
d. Click pictures wherever necessary and show bar diagrams for analysis of responses.

Topics to be included while writing the content in the file:

- Acknowledgement
- Certificate
- Index
- Introduction (explaining the topic well)
- Statement of Purpose (what made one pick up a certain topic)
- Research Question or Hypothesis (only one)
- Methodology (definition of the method chosen, why the method is appropriate for the topic chosen, advantages and disadvantages of the method)
- Presentation of secondary evidence such a newspaper articles, magazines articles and so on.

Following is the list of suggested topics:

Choose any one from the below or select your own topic related to social life.

- Disintegration of joint family
- Cyber bullying
- Gender inequality
- Role of women in society
- Social change
- Child Labour

Steps to be followed:

- Select a topic from the above list or identify your own topic related with social life.
- Get your topic approved by the subject teacher.
- Start the research work.
- Research can be done from internet, newspaper, books, magazines television etc.
- Formulate the hypothesis.

- Prepare a rough draft of the matter to be written in final file.
- Prepare for verification of your hypothesis with the help of method chosen for research (interview, questionnaire, survey, observation etc. whichever suits your hypothesis.)
- Perform the verification task.
- Note the conclusion.
- Prepare the final file .

ASSESSMENT OF 20 MARKS IN THE FINAL BOARD PRACTICAL EXAMINATION.