

DREAMLAND SCHOOL
CLASS XII [2020-2021]
ENGLISH LANGUAGE
HOME ASSIGNMENT

I . Write any Two compositions on the following topics:

- a. ‘ The small things that we own are most precious to us’. Give your views on the statement.
- b. Describe the career you have decided to pursue and the factors that have influenced you to make that decision.
- c. luck.
- d. Write an original story beginning with the following lines:
‘ The news came as a pleasant surprise.....’
- e. ‘Films should be made to escape from reality, not to remind us of how grim life is’. Argue for or against this statement.
- f. How far do you agree that nice people are seldom successful and thoroughly successful people are seldom nice ?

PROPOSAL WRITING-

II. Greenery has almost disappeared from the cityscape of the modern cities. Write a proposal in not more than 150 words, suggesting a Greening Your Neighbourhood Workshop which will facilitate interaction between residents and experts to improve the neighbourhood landscape.

III. Do as directed:

1. Those who are honest are trusted by all. [The...]
2. Kusum is not as intelligent as her brother Rahul. [Rahul.....]
3. She was in a hurry and I was in a hurry too. [She was in a hurry and so....]
4. Mr Kapoor taught us western music in school. [We were.....]
5. I am sorry I am unable to accompany you.[I regret my....]

IV. Fill in the blanks with a suitable word:

1. This is _____ all means the better book.
- 2.The robbers broke_____ the house in the middle of the night.
3. The kitchen was infested _____ rats.
4. The workers toiled _____ dawn to dusk.
5. The old man passed _____ in his sleep.

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DREAMLAND SCHOOL
CLASS XII
ENGLISH LITERATURE
HOME ASSIGNMENTS
ACADEMIC YEAR- 2020-21

STUDENTS ARE ADVISED TO GO THROUGH THE ANALYSIS OF EVERY TEXT GIVEN BELOW AND SOLVE THE QUESTIONS WHICH FOLLOW.

THE TEMPEST

ACT IV SCENE I- ANALYSIS

Prospero gives his blessing to Ferdinand and Miranda, warning Ferdinand only that he take care not to break Miranda's "virgin-knot" before the wedding has been solemnized (IV.i.15–17). Ferdinand promises to comply. Prospero then calls in Ariel and asks him to summon spirits to perform a masque for Ferdinand and Miranda. Soon, three spirits appear in the shapes of the mythological figures of Iris (Juno's messenger and the goddess of the rainbow), Juno (queen of the gods), and Ceres (goddess of agriculture). This trio performs a masque celebrating the lovers' engagement. First, Iris enters and asks Ceres to appear at Juno's wish, to celebrate "a contract of true love." Ceres appears, and then Juno enters. Juno and Ceres together bless the couple, with Juno wishing them honor and riches, and Ceres wishing them natural prosperity and plenty.

The spectacle awes Ferdinand and he says that he would like to live on the island forever, with Prospero as his father and Miranda as his wife. Juno and Ceres send Iris to fetch some nymphs and reapers to perform a country dance. Just as this dance begins, however, Prospero startles suddenly and then sends the spirits away. Prospero, who had forgotten about Caliban's plot against him, suddenly remembers that the hour nearly has come for Caliban and the conspirators to make their attempt on his life. Prospero's apparent anger alarms Ferdinand and Miranda, but Prospero assures the young couple that his consternation is largely a result of his age; he says that a walk will soothe him. Prospero makes a short speech about the masque, saying that the world itself is as insubstantial as a play, and that human beings are "such stuff / As dreams are made on." Ferdinand and Miranda leave Prospero to himself, and the old enchanter immediately summons Ariel, who seems to have made a mistake by not reminding Prospero of Caliban's plot before the beginning of the masque. Prospero now asks Ariel to tell him again what the three conspirators are up to, and Ariel tells him of the men's drunken scheme to steal Prospero's book and kill him. Ariel reports that he used his music to lead these men through rough and prickly briars and then into a filthy pond. Prospero thanks his trusty spirit, and the two set a trap for the three would-be assassins. On a clothesline in Prospero's cell, Prospero and Ariel hang an array of fine apparel for the men to attempt to steal, after which they render themselves invisible. Caliban, Trinculo, and Stephano enter, wet from the filthy pond. The fine clothing immediately distracts Stephano and Trinculo. They want to steal it, despite the protests of Caliban, who wants to stick to the plan and kill Prospero. Stephano and Trinculo ignore him. Soon after they touch the clothing, there is "A noise of hunters" (IV.i.251, stage direction). A pack of spirits in the shape of hounds, set on by Ariel and Prospero, drives the thieves out.

QUESTION

- I. What is this scene popularly known as?
- II. Who is Iris? Whom does she invoke?
- III. Why had Prospero punished Ferdinand?
- IV. How does Prospero compensate Ferdinand for the punishment borne by him?

PROSE

THE SOUND MACHINE- ANALYSIS

The Sound Machine' by Roald Dahl, published in his collection "The Complete Short Stories" in 1949, is about Klausner and his obsession with sounds.

According to the protagonist, Klausner, there are sounds which are inaudible to the human ear and he wants to develop a machine which can record these inaudible sounds. He spends hours developing it. At first what appeared to be an innocent wish has now turned into an obsession. Klausner wants to hear the sounds made by bats, flies and even plants. According to him, the plants make painful shrieking noises when they are cut.

Klausner becomes more and more determined to elicit sounds from wildlife as the story goes on, and he resorts to low means to do so. Despite the fact that he could hear the ‘shrieking’ of the roses when Mrs Saunders was gardening, he insisted she do it again so that he could record the sound. Similarly, when Dr Scott said he could not hear the shriek of the tree, Klausner became even more intent and attempted to axe it in order to elicit the sound. This regurgitates man’s lack of care for the environment and desire for own selfish gain at the expense of nature.

Obsession is a prevailing theme throughout the book. What starts out as piqued interest soon turns into full-fledged obsession, as Klausner resorts to cruel methods to elicit sounds from the plants, such as attempting to cut into the tree. This obsession eventually leads to his own demise as the branch from the tree falls and destroys his machine.

QUESTIONS

- I. Describe in your own words, Klausner’s obsession with sounds.

B. WORDSWORTH- ANALYSIS

‘B. Wordsworth’ is a short story written by V.S. Naipaul in 1959. The narrator tells the story of his relationship with a poet named B. Wordsworth when he (narrator) was a little boy. In B. Wordsworth by V. S. Naipaul we have the theme of admiration, identity, curiosity, friendship, control, freedom, uncertainty and coming of age. Narrated in the first person by an unnamed male the story is a memory piece and after reading the story the reader realises that Naipaul may be exploring the theme of admiration. If anything the narrator appears to admire Wordsworth though the reality may be that Wordsworth may not necessarily be who he says he is. He suggests that he is writing a poem that will be the greatest poem in the world however as the story progresses Wordsworth admits to the narrator that there is no poem. However it might also be significant that Wordsworth denies the story about the girl poet as the reality may be the girl poet may have been Wordsworth’s wife and the sudden loss of her is something that Wordsworth may have never overcome. Wordsworth was a young man at the time and had the future in front of him. However his life appears to have become one of loneliness since the girl poet’s death. If anything Wordsworth’s wife may have been his inspiration and it is possible he has not written any poetry since her death. Wordsworth is also a curiosity to the narrator. If anything the narrator is intrigued by the life that Wordsworth lives and it is a life that is completely different to the one that the narrator lives. The narrator’s life is being controlled by his mother yet when he is with Wordsworth he feels free.

QUESTIONS

- I. Justify the theme of friendship present in the short story B. Wordsworth.

POETRY

THE DARKLING THRUSH- ANALYSIS

“The Darkling Thrush” is a poem by the English poet and novelist Thomas Hardy. The poem describes a desolate world, which the poem’s speaker takes as cause for despair and hopelessness. However, a bird (the “thrush”) bursts onto the scene, singing a beautiful and hopeful song—so hopeful that the speaker wonders whether the bird knows something that the speaker doesn’t. Written in December 1900, the poem reflects on the end of the 19th century and the state of Western civilization. The desolation of the scene the speaker sees serves as an extended metaphor for the decay of Western civilization, while the thrush is a symbol for its possible rebirth through religious faith.

QUESTIONS

- I. How has the poet depended on the ‘dark’ to present a hope for a better future?

BIRCHES – ANALYSIS

The title is “Birches,” but the subject is birch “swinging.” And the theme of poem seems to be, more generally and more deeply, this motion of swinging. The force behind it comes from contrary pulls—truth and imagination, earth and heaven, concrete and spirit, control and abandon, flight and return. We have the earth below, we have the world of the treetops and above, and we have the motion between these two poles. The whole upward thrust of the poem is toward imagination, escape, and transcendence—and away from heavy Truth with a capital T. The downward pull is back to earth. Likely everyone understands the desire “to get away from the earth awhile.” The attraction of climbing trees is likewise universal. Who would not like to climb above the fray, to leave below the difficulties or drudgery of the everyday, particularly when one is “weary of considerations, / And life is too much like a pathless wood.” One way to navigate a pathless wood is to climb a tree. But this act of climbing is not necessarily so pragmatically motivated: For the boy, it is a form of play; for the man, it is a transcendent escape. In either case, climbing birches seems synonymous with imagination and the imaginative act, a push toward the ethereal, and even the contemplation of death. But the speaker does not leave it at that. He does not want his wish half- fulfilled—does not want to be left, so to speak, out on a limb. If climbing trees is a sort of push toward transcendence, then complete transcendence means never to come back down. But this speaker is not someone who puts much stock in the promise of an afterlife. He rejects the self-delusional extreme of imagination, and he reinforces his ties to the earth. He says, “Earth’s the right place for love,” however imperfect, though his “face burns” and “one eye is weeping.” He must escape to keep his sanity; yet he must return to keep going. He wants to push “[t]oward heaven” to the limits of earthly possibility, but to go too far is to be lost. The upward motion requires a complement, a swing in the other direction to maintain a livable balance.

And that is why the birch tree is the perfect vehicle. As a tree, it is rooted in the ground; in climbing it, one has not completely severed ties to the earth. Moreover, as the final leap back down takes skill, experience, and courage, it is not a mere retreat but a new trajectory. Thus, one’s path up and down the birch is one that is “good both going and coming back.” The “Truth” of the ice storm does not interfere for long; for the poet looks at bent trees and imagines another truth: nothing less than a recipe for how to live well.

QUESTION

1. Is “Birches” a poem which bridges fantasy and reality? Justify.

ଅନ୍ୟ ଲୋକ ଯେଉଁମାନେ ସାମାଜିକ ସେବା କରନ୍ତି ସେମାନେ ମଧ୍ୟ ସାମାଜିକ ସେବାକାରୀ ଅଟନ୍ତି।

ଏହି - ସାମାଜିକ ସେବାକାରୀଙ୍କୁ ସମାଜିକ ସେବାକାରୀ କୁହାଯାଏ। ସେମାନେ ସାମାଜିକ ସେବା କରନ୍ତି, ଯାହା ସାମାଜିକ ସେବାକାରୀଙ୍କୁ ସାମାଜିକ ସେବାକାରୀ କୁହାଯାଏ। ସେମାନେ ସାମାଜିକ ସେବା କରନ୍ତି, ଯାହା ସାମାଜିକ ସେବାକାରୀଙ୍କୁ ସାମାଜିକ ସେବାକାରୀ କୁହାଯାଏ।

ସାମାଜିକ ସେବାକାରୀଙ୍କୁ ସାମାଜିକ ସେବାକାରୀ କୁହାଯାଏ। ସେମାନେ ସାମାଜିକ ସେବା କରନ୍ତି, ଯାହା ସାମାଜିକ ସେବାକାରୀଙ୍କୁ ସାମାଜିକ ସେବାକାରୀ କୁହାଯାଏ। ସେମାନେ ସାମାଜିକ ସେବା କରନ୍ତି, ଯାହା ସାମାଜିକ ସେବାକାରୀଙ୍କୁ ସାମାଜିକ ସେବାକାରୀ କୁହାଯାଏ।

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Class 12

आषाढ का एक दिन

ग्राम में चारो ओर बहुत उत्साह है। यह दिन इस प्रदेश के जीवन का सबसे बड़ा उत्सव है।(पृष्ठ :80)
कौन किससे बात कर रहा है?ग्राम वासियो में किस बात को लेकर उत्साह है और क्यों? स्पष्ट कीजिये।

सारांश

'मजबूरी' दादी अम्मा के एकाकीपन और मजबूरी को दर्शाने वाली पारिवारिक कहानी है।

दादी अम्मा इस कहानी की मुख्य नारी पात्र हैं जिनका बेटा रामेश्वर, उसकी पत्नी रमा व उनका पुत्र बेटू बम्बई में रहते हैं। वे तीन वर्ष बाद दादी अम्मा के पास गाँव में आ रहे हैं। उनके आने की खुशी में दादी इतनी उत्साहित हैं कि अपना गठिया का दर्द भुला कर आँगन लीप रही हैं। साथ ही पुरानी लोरी गा रही हैं। जब बर्तन माँजने वाली नर्बदा ने देखा तो हैरत में आ गई। बोली, "अम्मा ! यह क्या हो रहा है?" अम्मा पुलकित स्वर में बोलीं, "मेरा बेटू आ रहा है कल।" वह बेटे और बेटू की कल्पना से पुलकित हो जाती हैं। लोरी फिर से गुनगुनाने लगती हैं। कल्पना में खो जाती हैं कि जब रामेश्वर छोटा था, लोरी सुने बिना नहीं सोता था, बेटू भी उसी की तरह होगा।

अम्मा का काम समाप्त हुआ। नर्बदा ने सहारा देकर उन्हें उठाया और उन पर नाराज़गी जताते हुए कहा कि अपनी उम्र और बीमारी की परवाह किये बिना वह क्यों मिट्टी में सनी बैठी हैं। वह यह भी कहती है कि तीन बरस के बाद बेटा आ रहा है जिसको माँ के प्रति मोह-माया तो है नहीं, वही मरी जाती है उसके पीछे। पर माँ बेटे की नौकरी की मजबूरी समझती थीं, धन कमाने के कारण बेटा माँ से दूर है, वह बेटे के विरुद्ध कुछ नहीं सुनना चाहती थीं। नर्बदा अम्मा को खरी-खोटी सुनाना चाहती थी परंतु माँ की दशा देखकर उसे तरस आ गया। नर्बदा बरसों से उनके यहाँ काम करती थी। जब काम करके जाने लगी तो अम्मा ने उससे कहा कि जाते समय ग्वाले से कहती जाए कि अगले दिन से जल्दी दूध दे जाए तथा आगे से दूध ज्यादा लगा करेगा तथा उससे यह भी कहा कि जब तक उसका बेटा व बहू घर में रहेंगे वह वहाँ रहा करे क्योंकि काम तो बढ़ ही जाएगा, साथ ही पैसों की चिंता न करने के लिए कहा।

रात तो जैसे-तैसे काटी। सुबह होते ही वह अपना काम जल्द खत्म करना चाहती थीं। घुटने का दर्द मन के उत्साह में खो गया था। बेटे, बहू और पोते से मिलने की उमंग में पौष की ठंडक भी जाती रही। कड़कती सर्दों में ठिठुरते-ठिठुरते अम्मा ने बेटे-बहू को गरम करने के सारे आयोजन कर डाले। वह सारे काम जल्दी निपटा कर अधिक से अधिक समय बहू-बेटे के साथ बिताना चाहती थीं। वह अपने को इतना व्यस्त करना चाहती थीं कि इंतज़ार की घड़ी जल्दी कट जाये।

जब रामेश्वर और रमा आये तो अम्मा ने रामेश्वर की गोद से बच्चे को झपटकर छाती से चिपका लिया। रामेश्वर ने माँ के पाँव छुए। बच्चा रोने लगा तो अम्मा ने उसे रमा की गोद में देकर कहा, अभी पहचानता नहीं है।

चाय-पानी के बाद अम्मा ने बहू से कहा कि उसने खबर नहीं दी कि उसके दूसरा बच्चा होने वाला है। रमा ने जब साहस करके बेटू को अम्मा के पास छोड़ने की बात कही तो पहले तो उन्हें विश्वास नहीं हुआ। फिर भावविह्वल हो रोने लगीं। रामेश्वर के जाने के बाद वह कितनी अकेली हो गई थीं। अब सुने घर में बच्चा रहेगा तो जन्म सफल हो जाएगा।

रामेश्वर और रमा को अपनी माँ की सुख-सुविधा का बहुत ध्यान था। दोनों माँ को दुःखी नहीं देखना चाहते थे। जब माँ के कपड़ों को देखा तो उन्होंने गरम कपड़े बनवाने का आग्रह किया। पर माँ को तो बेटू के सिवाय कुछ नहीं सूझ रहा था। वह उनसे कहती हैं कि बेटू मेरे पास रहेगा, अब यह बात पक्की हो गई, टाल मत जाना।

अम्मा का सारा समय बेटू की देखभाल में व्यतीत होने लगा। बेटू के कारण उनमें नया उत्साह आ गया था। घुटनों के दर्द के मारे कहाँ तो वह अपना बोझ भी नहीं उठा पाती थीं और कहाँ बेटू को सारा दिन लादे फिरतीं। उन्होंने बेटू को पालने के नये तरीके भी सीख लिए। निश्चित समय पर शीशी में दूध भर कर पिलाना, उसका ध्यान रखना। बहू के जाने के एक महीना बीतते-बीतते समाचार आया कि बहू के दूसरा भी लड़का हुआ है। अम्मा की छाती से जैसे एक भारी बोझ उतर गया। उन्हें लगा कि अब बेटू पूरी तरह उनका है। रामेश्वर माता-पिता के लिए ढेर सारे कपड़े बनवाकर दे गया था।

रमा बेटू को देखने एक साल बाद आई तो माथा ठनक गया। वह ज़िद्दी हो गया था। दादी अम्मा के हाथ से खाता, उनके अँगूठे को पकड़कर सोता, उनका पल्ला पकड़कर घूमता, गली के गंदे बच्चों के साथ खेलता, हर फेरी वाले से ज़िद्द कर कुछ न कुछ खरीदता। रमा ने दादी-अम्मा से बेटू के इस व्यवहार के बारे में बात की, पर वह हँसी में टाल गई। दादी के अनुसार छोटे बच्चों का ऐसा व्यवहार एक सामान्य बात थी। रमा बेटू को अपने साथ ले जाना चाहती थी पर पप्पू छोटा था इसलिए वह न ले जा सकी।

दो साल बाद रमा, रामेश्वर अपने तीन साल के पप्पू को लेकर आये। दो महीने पहले ही रमा ने उसे वहाँ के एक अंग्रेज़ी स्कूल में भरती करवाया था। पप्पू अंग्रेज़ी की छोटी-छोटी कविताएँ सुनाता और तमीज़ से बोलता पर बेटू में कोई परिवर्तन नहीं था। रमा बेटू को साथ ले जाना चाहती थी। रामेश्वर न तो पत्नी की बात टालना चाहता था, न अम्मा को दुःख देना चाहता था। रमा भी अम्मा को दुःख देना नहीं चाहती थी पर बेटे का भविष्य भी नहीं बिगाड़ सकती थी। आखिरकार रमा ने बेटू को अपने साथ ले जाने का निर्णय अम्मा को सुनाया। वह बहलाकर उसे अपनी माँ के यहाँ ले गई। दादी-अम्मा फिर अकेली रह गईं। पड़ोस की औरतें उनसे बेटू के बारे में पूछतीं। वह उनसे कहतीं, अब उनकी उम्र बच्चे पालने की नहीं है। वह अपने दर्द को अपने अंदर छिपा लेतीं। जब दवाखाने के नौकर ने, जो रमा ओर बेटू के साथ गया था, वापिस आकर बताया कि वहाँ बेटू को बुखार आ गया है तो दादी अम्मा उसे वहाँ से ले आईं।

एक साल इसी प्रकार बीता। रमा बम्बई से आई और बेटू का वही रवैया देखा तो अबकी बार वह बेटू को अपने साथ सीधे बम्बई ले गई। दादी अम्मा ने शिबू को रमा के साथ भेजा, यदि बेटू का मन बम्बई में नहीं लगा तो शिबू उसे वापिस ले आएगा। पर सात दिन बाद जब शिबू वापस आया तो उसके साथ बेटू नहीं था। अम्मा ने बेटू की कुशल पूछी तथा काँपते हाथों से शिबू को सवा रुपये का प्रसाद लाने को कहा क्योंकि अब बेटू का मन बम्बई में लग गया था। उनकी चिन्ता दूर हुई पर बेटू से बिछुड़ने के कारण उनकी आँखों में आँसू थे, पर लोगों को दिखाने के लिए अपने मन के भाव छिपाकर मुस्करा रहीं थीं।

प्रश्न : मज़बूरी कहानी दो माताओं के प्रेम की बेजोड़ कहानी है। दोनों की भावनाओं के अन्तर को उदाहरण सहित स्पष्ट कीजिए।

Business Studies

Ch-1 Human resource management:

Human resources are the basic pillars of an organization. Let us understand the term human resources first. Human means people and resources means from where we can draw some benefits.

When we talk about human resources we talk about the employees, their usefulness, and their management. No organization can sustain for long if their employees are not in a good condition or if they are not happy. So an organization shall always make sure that the employees are happy so that they can perform efficiently and effectively.

Answer the following questions:

1. What do you mean by human resources?
2. Explain any five importance of human resources?
3. Explain the major role of human resources in an organization.
4. Explain any 5 functions of human resources?
5. What will happen if the human resources of an organization are not upto mark?

Commerce

Ch-1 Business environment.

Business environment is the sum total of all the factors operating outside an organization and it also influences the working of an organization.

In order to be successful, an organization should always keep an eye on the changes taking place in its business environment.

Answer the following questions:

1. What do you mean by a business environment?
2. Explain the importance of business environment in the success of an organization.
3. What are the elements of a business environment.
4. What are the features of business environment.
5. What can be the major impact of not studying a business environment?

Ch-2 Capital fixed and working:

Business firms refers to the money and credit that is required to conduct the business operations. It talks about the cash and the credit which is required to run a particular business.

Answer the following questions:

1. What is the nature of a business finance?
2. Explain any five importance of business finance.?
3. What are the major sources of business finance?
4. What do you mean by financial planning?
5. What do you mean by fixed capital?

Economics

Ch-1 microeconomics and macroeconomic:

Microeconomics is that branch of economics that deals with small economic units of an economy. Macroeconomic economics deals with the aggregate economy or with the whole economy.

Answer the following questions:

1. What do you mean by microeconomics?
2. What do mean by macroeconomic?
3. Write any five differences between microeconomics and macroeconomic?
4. Give two examples of microeconomics and macroeconomic economics and explain them?

Ch-2 Demand and law of demand:

Demand in economics mean a want if a commodity backed up by a purchang power and willingness to by a particular commodity.The law of demand says that when the quantity of the goods demanded increases its price falls and vice versa.

Answer the following questions:

1. What is ment by demand?
2. Explain the law of demand.
3. What is meant by individual demand?
4. What is a market demand?
5. Write 2 points of difference between individual and market demand.

Political Science:

There are nearly 200 sovereign states in the world & they can be classified into different categories. They can be broadly classified into three groups namely-Totalitarian, Authoritarian & Liberal democratic States. A totalitarian state is one which has full control over the life of an individual whereas an authoritarian state is one in which the power/authority is in the hand of an individual or a minor group of people who are not accountable to the population of that country. Liberal democratic state is ideal for a country as people's power is supreme over here & it's the people who elect the government.

Questions:

- 1) State any five features of a liberal democratic state.
- 2) Define authoritarian state as per C.H. Dillon.
- 3) Mention the features of a totalitarian state as per Neumann.

Solid State

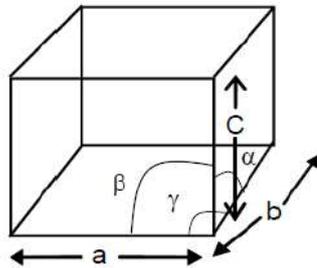
The solid state is that state of matter in which the constituent particles (ions, atoms or molecules) are closely packed in the lattice and are unable to move, they can only vibrate along the axis.

Solids can be broadly classified into two categories,

- (a) **Amorphous solid**
- (b) **Crystalline solid**

Unit Cell

The smallest part of a crystal which when repeated in all directions results in formation of crystal lattice is called a unit cell.



Bravais lattice:

In 1850, August Bravais (mathematician) observed there are only seven types of basic crystal system. These are known as Bravais lattices and corresponding unit cell is called Bravais unit cell.

Solid State

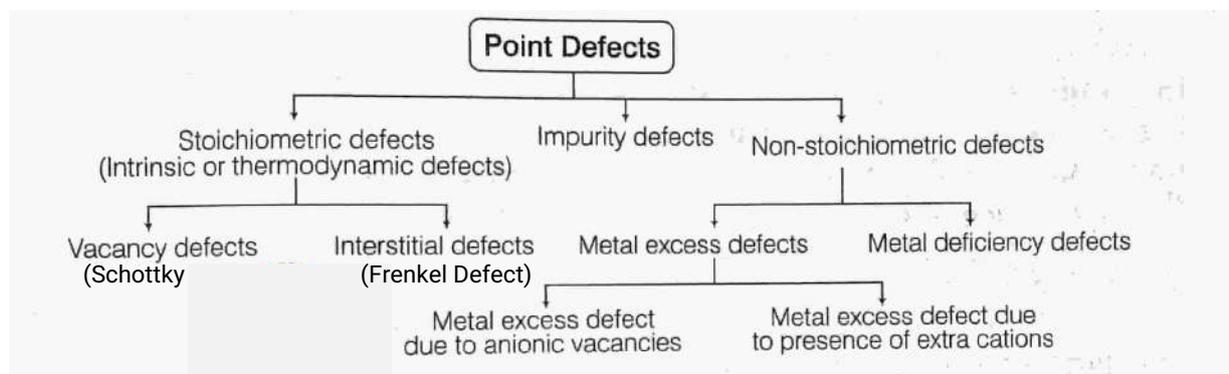
System	Axial lengths	Axial angles	Examples
Cubic (C)	$a = b = c$	$\alpha = \beta = \gamma = 90^\circ$	Cu, NaCl, KCl, Alums, Diamond, Zinc blende
Tetragonal (T)	$a = b \neq c$	$\alpha = \beta = \gamma = 90^\circ$	White tin(Sn), SnO ₂ , TiO ₂ , CaSO ₄
Orthorhombic (O) or Rhombic	$a \neq b \neq c$	$\alpha = \beta = \gamma = 90^\circ$	KNO ₃ , K ₂ SO ₄ , BaSO ₄ , PbCO ₃ , CaCO ₃ , Rhombic sulphur
Monoclinic (M)	$a \neq b \neq c$	$\alpha = \gamma = 90^\circ \neq \beta$	Na ₂ SO ₄ ·10 H ₂ O, PbCrO ₄ , Monoclinic sulphur
Triclinic(T)	$a \neq b \neq c$	$\alpha \neq \beta \neq \gamma \neq 90^\circ$	CuSO ₄ ·5H ₂ O, K ₂ Cr ₂ O ₇ , H ₃ BO ₃
Rhombohedral (R) or Trigonal	$a = b = c$	$\alpha = \beta = \gamma \neq 90^\circ$	NaNO ₃ , ICl, As, Sb, Bi, Calcite (CaCO ₃),
Hexagonal (H)	$a = b \neq c$	$\alpha = \beta = 90^\circ, \gamma = 120^\circ$	ICl, Graphite, Mg, Zn, Cd, ZnO, Pbl ₂

Density of a crystal:

$$\text{density} = \frac{Z \times M}{N_A \times a^3}$$

Where, Z = rank of the crystal, M = molecular weight of the crystal, N_A = Avogadro's no. & a = edge length of the unit cell.

Defects in Solid State:



Questions:

1. An element has atomic weight 93 g mol⁻¹ and density 11.5 g cm⁻³. If the edge length of its unit cell is 300 pm, Identify the type of unit cell. (N_A = 6.023x10²³)
2. Calculate the radius of copper atom. The atomic weight of copper is 63.55 g mol⁻¹. It

Solid State

crystallises in face centred cubic lattice and has density of 8.93 g cm^{-3} at 298 K. ($N_A = 6.023 \times 10^{23}$)

3. Give an example of crystal system where 4 types of Bravais lattices are present.?
4. Calculate the number of atoms per unit cell in a face centred cubic lattice.
5. Give an example each of a molecular solid, an ionic solid.

Solution & Colligative Property

COLLIGATIVE PROPERTIES

These are the properties of solutions which depend upon the number of solute particles (molecules or ions) but not upon their nature. These are arising due to the presence of a non-volatile solute.

The important colligative properties are,

1. Relative lowering of vapour pressure
2. Elevation of boiling point
3. Depression of freezing point
4. Osmotic pressure

Van't Hoff factor (i):

$$i = \frac{\text{no. of particles after association or dissociation}}{\text{no. of particles initially present}}$$

Mathematical Expression:

Relative lowering of vapour pressure:

$$\frac{p^0 - p}{p^0} = i x_{\text{solute}}$$

Where, p^0 is the vap. pressure of the pure solvent, p is the vap. pressure of the solution after adding solute, $(p^0 - p)$ is the lowering of vap. pressure, i is the van't Hoff factor & x_{solute} is the mole fraction of the solute.

Elevation of boiling point:

$$\Delta T_b = i K_b m$$

Where, ΔT_b is the increment of the boiling point, i is the van't Hoff factor, K_b is the ebullioscopic constant & m is the molality of the solution.

Depression of freezing point:

$$\Delta T_f = i K_f m$$

Where, ΔT_f is the decrement of the freezing point, i is the van't Hoff factor, K_f is the cryoscopic constant & m is the molality of the solution.

Osmotic pressure:

$$\pi V = iRT$$

where, π is the osmotic pressure, V is the vol. of the solution, i is the van't Hoff factor, R is universal gas constant, T is the absolute temp.

Solution & Colligative Property

Questions:

1. A 10% aqueous solution of cane sugar (MW 342) is isotonic with 1.754% aqueous solution of urea. Find the molecular weight of urea.
2. The Molecular weight of an organic compound is 58 gmol^{-1} . What will be the boiling point of a solution containing 48 gm of solute in 1200 gm of water? [K_b for water = $0.513^\circ\text{CKgmole}^{-1}$; B.P. of water = 100°C]
3. The rate of reaction increases four times when the temperature changes from 293K to 313K. What will be the energy of activation (E_a) of the reaction assuming that it does not change with temperature? [$R = 8.314 \text{ JK}^{-1}\text{mole}^{-1}$]
4. The freezing point of a solution containing 5.85gm of NaCl in 100 gm of water is -3.348°C . Calculate Van't Hoff factor 'i' for this solution. What will be the experimental molecular weight of NaCl? [K_f for water = 1.86 KKgmol^{-1}]
5. A solution is prepared by dissolving 0.625gm of glucose in 102.8gm of water. Calculate the freezing point of the solution. [K_f of water $1.87 \text{ K Kgmol}^{-1}$]
6. The freezing point of a solution containing 0.4gm of acetic acid in 40 gm of benzene is lowered by 0.45K. Calculate the degree of association of acetic acid in benzene. Acetic acid forms a dimer when dissolved in benzene. (K_f for benzene = 5.12 KKgmol^{-1})

CLASS-XII
SUBJECT-PHYSICS
CHAPTER-1: ELECTRIC CHARGES AND FIELDS

- ◆ Electrostatic force between two point charges,

$$F = \frac{q_1 q_2}{kr^2} \text{ (in CGS system); } F = \frac{q_1 q_2}{4\pi\epsilon r^2} \text{ (in SI)}$$

where k = permittivity of the medium in CGS system and ϵ = permittivity of the medium in SI.

- ◆ Relation between κ and ϵ :

$$\kappa = \frac{\epsilon}{\epsilon_0} \text{ [where } \epsilon_0 = \text{permittivity of vacuum (or air)} \\ = 8.854 \times 10^{-12} \text{ C}^2 \cdot \text{N}^{-1} \cdot \text{m}^{-2} \text{]}$$

- ◆ For vacuum or air, $k = 1$

$$\text{and } \frac{1}{4\pi\epsilon_0} = 9 \times 10^9 \text{ N} \cdot \text{m}^2 \cdot \text{C}^{-2}$$

- ◆ The electric intensity at a point at distance r from a point charge q ,

$$E = \frac{q}{kr^2} \text{ (in CGS system); } E = \frac{1}{4\pi\kappa\epsilon_0} \cdot \frac{q}{r^2} \text{ (in SI)}$$

- ◆ Relation between electrostatic force and electric intensity,

$$F = qE$$

- ◆ Electric dipole moment, $p = 2lq$,

where, $2l$ = length of dipole, q = charge of dipole

It is a vector quantity defined as $\vec{p} = 2q\vec{l}$, where \vec{l} is directed from the negative to the positive charge of the dipole.

- ◆ Electric field intensity at a point on the axis of a dipole,

$$E = \frac{2pr}{4\pi\kappa\epsilon_0(r^2 - l^2)^2} \text{ (in SI)}$$

$$E = \frac{2pr}{k(r^2 - l^2)^2} \text{ (in CGS system)}$$

When $r \gg l$,

$$E = \frac{1}{4\pi\kappa\epsilon_0} \cdot \frac{2p}{r^3} \text{ (in SI);}$$

$$E = \frac{2p}{kr^3} \text{ (in CGS system)}$$

- ◆ Electric field intensity at a point on the perpendicular bisector of a dipole,

$$E = \frac{p}{4\pi\kappa\epsilon_0(r^2 + l^2)^{3/2}} \text{ (in SI)}$$

$$E = \frac{p}{k(r^2 + l^2)^{3/2}} \text{ (in CGS system)}$$

When $r \gg l$,

$$E = \frac{1}{4\pi\kappa\epsilon_0} \cdot \frac{p}{r^3} \text{ (in SI); } E = \frac{p}{kr^3} \text{ (in CGS system)}$$

- ◆ Electric field intensity at any point due to an electric dipole,

$$E = \frac{1}{4\pi\kappa\epsilon_0} \cdot \frac{p}{r^3} \sqrt{3\cos^2\theta + 1} \text{ (in SI)}$$

$$E = \frac{p}{kr^3} \sqrt{3\cos^2\theta + 1} \text{ (in CGS system)}$$

- ◆ Torque acting on an electric dipole inclined at an angle θ with a uniform electric field,

$$\tau = pE \sin\theta$$

CLASS-XII
SUBJECT-PHYSICS
ASSIGNMENT-1
CHAPTER-1: ELECTRIC CHARGES AND FIELDS
(F.M.-30)

QUESTION-1

[1×5]

(A) 1. The unit of intensity of electric field is:

- (i) N/C (ii) J/C (iii) Vm (iv) N/m

2. Consider a spherical shell of metal at the centre of which a positive point charge is kept

- (i) The electric field is zero outside the shell (ii) The electric field is zero everywhere
(iii) The electric field is zero in the region inside the shell (iv) Electric field is non zero in both region outside and inside the shell

(B) 1. When a polythene piece is rubbed with wool it acquires negative charge. Is there transfer of mass from wool to polythene?

2. When is the torque on a dipole in a field maximum?
3. Write the dimensional formula of electric field.

QUESTION-2

[2×4]

1. Define electric field intensity and write down the relation between electric field and force.
2. How does the speed of an electrically charged particle affect its mass and charge?
3. Why should a test charge be of negligibly small magnitude?
4. What is meant by quantization of electric charge and what is its cause?

QUESTION-3

[3×4]

1. What do electric lines of force represent? Explain repulsion between two like charges on their basis.
2. Charges of $+1.2 \times 10^{-8}$ C and -1.6×10^{-8} C are placed at two points A and B respectively, distant 5 cm from each other. Compute the electric field at a point C distant 3 cm from A and 4 cm from B.
3. Is there some way of producing high voltage on your body without getting a shock?
4. Electrostatic experiments do not work well on humid days. Give reason.

QUESTION-4

[5×1]

1. (i) Derive an expression for electric field intensity at a point at distance r from a point charge q.
(ii) A spherical balloon carries a charge that is uniformly distributed over its surface as the balloon is blown up and increases in size. How does the total electric flux coming out of the surface change? Give reason.

(Sudeb Chatterjee)

CLASS-XII
SUBJECT-PHYSICS
CHAPTER-2: GAUSS' THEOREM

- ◆ Electric flux through a surface $d\vec{S}$ in an electric field of intensity \vec{E} is,

$$\phi = \int_S \vec{E} \cdot d\vec{S}$$

- ◆ According to Gauss' theorem, total electric flux linked with a closed surface is given by,

$$\oint_S \vec{E} \cdot d\vec{S} = \frac{4\pi}{k} q \quad (\text{in CGS system})$$

where q is the charge enclosed by the closed surface and k is the permittivity of the medium.

$$\oint_S \vec{E} \cdot d\vec{S} = \frac{q}{\epsilon} \quad (\text{in SI})$$

where ϵ is the permittivity of the medium.

- ◆ The electric field intensity at a point due to a point charge,

$$E = \frac{q}{4\pi\epsilon r^2} \quad (\text{in SI}); \quad E = \frac{q}{kr^2} \quad (\text{in CGS system})$$

- ◆ The electric field intensity due to a uniformly charged thin spherical shell at a point outside the shell,

$$E = \frac{1}{4\pi\epsilon} \cdot \frac{q}{r^2} \quad (\text{in SI}); \quad E = \frac{q}{kr^2} \quad (\text{in CGS system})$$

- ◆ The electric field intensity at a point due to an infinitely long straight charged conducting wire,

$$E = \frac{1}{4\pi\epsilon} \cdot \frac{2\lambda}{r} \quad (\text{in SI}); \quad E = \frac{2\lambda}{kr} \quad (\text{in CGS system})$$

- ◆ The electric field intensity at a point due to an infinite non-conducting uniformly charged plane lamina,

$$E = \frac{\sigma}{2\epsilon} \quad (\text{in SI}); \quad E = \frac{2\pi\sigma}{k} \quad (\text{in CGS system})$$

- ◆ Intensity of the electric field at a point very close to a charged conductor having surface density of charge σ ,

$$E = \frac{\sigma}{\epsilon} \quad (\text{in SI}); \quad E = \frac{4\pi\sigma}{k} \quad (\text{in CGS system})$$

CLASS-XII
SUBJECT-PHYSICS
ASSIGNMENT-2
CHAPTER-2: GAUSS' THEOREM
(F.M.-30)

QUESTION-1

[1×5]

- (A) 1. The electric field inside a spherical shell of uniform surface charge density is
(i) Zero (ii) Constant less than zero
(iii) Directly proportional to distance from the centre (iv) None of this
2. The nucleus of hydrogen atom is a sphere of radius 10^{-15} m. The electric field at the surface of the nucleus is :
(i) 14.4×10^4 V/m (ii) 14.4×10^{10} V/m (iii) 14.4×10^{19} V/m (iv) 14.4×10^{20} V/m.
- (B) 1. A sphere S_1 encloses a charge q . There is a larger concentric sphere S_2 , with no additional charge between S_1 and S_2 . Find the ratio of electric flux through S_1 and S_2 .
2. How do the expressions for electric fields just outside a sheet of charges and a charged conductor differ?
3. 'If a charge is placed outside a closed surface electric flux is zero' -why?

QUESTION-2

[2×4]

1. Define electric flux and write its SI unit.
2. Write any two properties of Gaussian surface.
3. Any violation of Gauss' theorem will indicate departure from Inverse Square Law. Explain.
4. A charged oil-drop of mass m is suspended in equilibrium between two horizontal conducting plates, each of area A metre² and having charges $+q$ and $-q$ coulomb. Find the charge of the drop.

QUESTION-3

[3×4]

1. Gauss law in electrostatics is true for any closed surface no matter what is the shape or size is- justify this statement with the help of a suitable example.
2. Use Gauss law to derive the expression for the electric field between two uniformly charged large parallel sheet having same type of charge.
3. Using Gauss Theorem find the expression of electric field due to a uniformly charged thin spherical shell (i) at an external point (ii) on the surface
4. A point charge produces an electric flux of $-750 \text{ Nm}^2\text{C}^{-1}$ through a spherical Gaussian surface of 10 cm radius with centre at the charge. (i) If the radius of the Gaussian surface be doubled, how much flux would pass through the surface? (ii) What is the magnitude of the point charge?

QUESTION-4

[5×1]

1. (i) State Gauss law in electrostatics.
(ii) Using this theorem show mathematically that for any point outside the shell the field due to Uniformly charged thin spherical shell is the same as if entered charge of the shell is concentrated at the centre. Why do you expect the electric field inside the shell to be zero according to this theorem?

(Sudeb Chatterjee)

CLASS-XII
SUBJECT-PHYSICS
CHAPTER-7.MOVING CHARGES AND MAGNETISM

- According to Biot-Savart law or Laplace's law, the magnitude of magnetic field $\delta\vec{B}$ at a point due to a small element δl of a current carrying wire is,

$$\delta B \propto \frac{I\delta l \sin\theta}{r^2} \quad \text{or,} \quad \delta B = k \frac{I\delta l \sin\theta}{r^2}$$

where r = distance of the point from the element and θ = angle between the current element $\delta\vec{l}$ and position vector \vec{r} .

In SI, the conventional form of Biot-Savart law is,

$$\delta B = \frac{\mu_0}{4\pi} \cdot \frac{I\delta l \sin\theta}{r^2} \quad [\mu_0 = \text{magnetic permeability of vacuum} = 4\pi \times 10^{-7} \text{ H} \cdot \text{m}^{-1}]$$

- Generally, $B = \mu H$ or, $H = \frac{1}{\mu} B$.
- The magnetic field at any point near a straight conductor,

$$B = \frac{\mu_0 I}{4\pi r} (\sin\theta_1 + \sin\theta_2)$$
 - Magnetic field due to a infinite straight conductor,

$$B = \frac{\mu_0}{4\pi} \cdot \frac{2I}{r}$$
- Magnetic field at the centre of a circular conductor of N turns,

$$B = \frac{\mu_0 IN}{2r} \quad [r = \text{radius of the circle}]$$
- Magnetic field at a point on the axis of a circular conductor of N turns,

$$B = \frac{\mu_0 NI}{2} \cdot \frac{r^2}{(r^2 + x^2)^{3/2}}$$

[where, x = distance of the point from the centre of the coil]

- Magnetic field due to a long, straight solenoid at any point on its axis,

$$B = \mu_0 n I$$

[n = number of turns per unit length of the solenoid = $\frac{N}{L}$]

- Magnetic field due to a toroid,

$$B = \mu_0 n I$$

[n = number of turns per unit length of the toroid = $\frac{N}{2\pi r}$]

- Force on a charged particle moving with a velocity (\vec{v}) in a uniform magnetic field (\vec{B}) is

$$\vec{F} = q\vec{v} \times \vec{B}$$

- The radius of the circular path described by a moving charged particle entering a uniform magnetic field perpendicularly,

$$r = \frac{mv}{qB}$$

[m = mass of the charged particle, v = velocity of the particle, q = charge of the particle and B = magnetic field]

- Time period of revolution, $T = 2\pi \frac{m}{qB}$.
- Number of complete revolutions along the circular path, i.e., frequency of circular motion,

$$n = \frac{1}{T} = \frac{1}{2\pi} \left(\frac{q}{m} \right) B$$

This is known as **cyclotron frequency**.

- A charged particle, when enters a magnetic field obliquely, it follows a helical or spiral path.

Pitch of this spiral or helical path

$$= \text{time period} \times \text{linear velocity}$$

$$= \text{circumference of the circular path} \times \cot\theta$$

- Force experienced by a charged particle having charge $+q$ experiences in a uniform electric field,

$$\vec{F} = q\vec{E}$$

- For a charge q moving in an electromagnetic field with velocity \vec{v} , the forces acting are,

$$(i) \text{ electric force, } \vec{F}_e = q\vec{E} \quad [\vec{E} = \text{electric field}]$$

$$(ii) \text{ magnetic force, } \vec{F}_m = q\vec{v} \times \vec{B} \quad [\vec{B} = \text{magnetic field}]$$

- Resultant Lorentz force, $\vec{F} = q(\vec{E} + \vec{v} \times \vec{B})$

- In case of a current carrying conductor in a magnetic field, the resultant magnetic force acting on the whole circuit or a finite part of the circuit,

$$F = \int dF = \int B I dl \sin\theta$$

The torque acting on a rectangular conductor having N turns placed in a uniform magnetic field,

- Torque = $BINA$

- Force per unit length $F = \frac{\mu_0 I_1 I_2}{4\pi r}$

CLASS-XII
SUBJECT-PHYSICS
ASSIGNMENT-1
CHAPTER-7.MOVING CHARGES AND MAGNETISM
(F.M.-30)

QUESTION-1

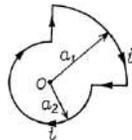
[1×5]

- (A) 1. A moving electron enters in a uniform magnetic field perpendicularly. Inside the magnetic field, the electron travels along:
 (a) a straight line (b) a parabola (c) a circle (d) a hyperbola
2. Along straight wire of radius a carries a steady current i . The current is uniformly distributed across its cross-section. The ratio of the magnetic field at $a/2$ and $2a$ is:
 (a) 4 (b) 1 (c) $\frac{1}{2}$ (d) $\frac{1}{4}$
- (B) 1. The velocities of two alpha particles A and B entering a uniform magnetic field are in the ratio 4:1. On entering the field they move in different circular paths. Give the ratio of the radii of their paths.
2. Define 1 Ampere in terms of force between two current carrying conductors.
3. What is synchrotron?

QUESTION-2

[2×4]

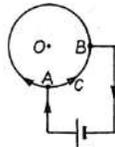
- Write the dimension of magnetic field (B) and free space permeability (μ_0).
- A circular coil of wire having 100 turns, each of radius 8.0 cm, carries current of 0.40 A. Find the magnetic field at the centre of the coil.
- What is the magnitude of magnetic force per unit length on a wire carrying current of 8 A and making an angle of 30° with the direction of a uniform magnetic field 0.15 T?
- Find out the magnitude and direction of magnetic field at the point O of the given current-carrying bent wire.



QUESTION-3

[3×4]

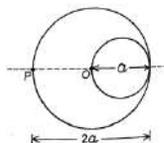
- State and prove Ampere's circuital law.
- Applying Ampere's circuital law find the magnetic field inside the core of an endless solenoid.
- What is cyclotron? Write the condition of resonance. What is the use of cyclotron?
- A cell is connected across two points A and B of a uniform circular conductor. Prove that the magnetic field at its centre O will be zero.



QUESTION-4

[5×1]

- A cylindrical cavity of diameter a exists inside a cylinder of diameter $2a$ as shown in figure. Both the cylinder and the cavity are infinitely long. A uniform current density J flows along the length. If the magnitude of the magnetic field at the point P is given by $\frac{N}{12}\mu_0 aJ$, then what is the value of N?



CLASS-XII
SUBJECT-PHYSICS

CHAPTER- 8.TORQUE ON A CURRENT-LOOP: MOVING-COIL GALVANOMETER

- ◆ In case of a moving coil galvanometer, if the number of turns in the coil be N , area of the plane of the coil A , magnetic field parallel to the coil B , current through the coil I and the coil comes to rest at an angle θ , then

$$I = \frac{c}{BNA} \theta$$

Here, c = restoring torque per unit deflection = constant.

- ◆ Required shunt to be connected with a galvanometer in parallel to convert it to an ammeter,

$$S = \frac{I_G}{I - I_G} \cdot G$$

[where S = shunt resistance, G = galvanometer resistance, I_G = maximum galvanometer current, I = main current in circuit]

- If the range of an ammeter be increased to n -times, then

$$S = \frac{1}{\frac{I}{I_G} - 1} \cdot G = \frac{G}{n - 1}$$

- To convert the galvanometer into a voltmeter for measuring a maximum voltage of V , the resistance to be connected in series with the galvanometer,

$$R = \frac{V}{I_G} - G$$

- If the range of the voltmeter be increased to n -times, then

$$R = G \left(\frac{V}{V_G} - 1 \right) = G(n - 1)$$

- Units of some magnetic quantities:

Quantity	Symbol	Unit		Relation Between units
		SI	CGS	
Magnetic permeability	μ	$\text{Wb} \cdot \text{A}^{-1} \cdot \text{m}^{-1}$ or, $\text{H} \cdot \text{m}^{-1}$		
Magnetic field	B	$\text{Wb} \cdot \text{m}^{-2}$ or tesla (T)	gauss (G)	$1 \text{Wb} \cdot \text{m}^{-2} = 10^4 \text{G}$
Magnetic intensity	H	$\text{A} \cdot \text{m}^{-1}$	oersted (Oe)	$1 \text{A} \cdot \text{m}^{-1} = 4\pi \times 10^{-3} \text{Oe}$

CLASS-XII
SUBJECT-PHYSICS
ASSIGNMENT-2
CHAPTER- 8.TORQUE ON A CURRENT-LOOP: MOVING-COIL GALVANOMETER
(F.M.-30)

QUESTION-1

[1×5]

- (A) 1. Sensitivity of a moving coil galvanometer can be increased by:
(a) increasing number of turns (b) increasing magnetic field intensity B
(c) increasing area of the coil (d) all of the above.
2. A voltmeter has a resistance of G ohm and a range of V volt. To increase the range up to nV volt, the value of the series resistance used with it is:
(a) $G(n-1)$ (b) G/n (c) Gn (d) $G/(n-1)$
- (B) 1. What is the nature of the magnetic field in a moving-coil galvanometer?
2. Why should ammeter have a low resistance?
3. Why earth's field does not affect the working of a moving-coil galvanometer?

QUESTION-2

[2×4]

1. What is the working principle of moving coil galvanometer?
2. A galvanometer coil has resistance 12Ω and the meter shows full scale deflection for a current of 3 mA. How will you convert the galvanometer into a voltmeter of range 0-18 V.
3. A galvanometer coil has resistance 15Ω and the meter shows full scale deflection for a current of 4 mA. How will you convert the galvanometer into an ammeter of range 0-6 A.
4. Why resistance of voltmeter is high and that of ammeter is very low?

QUESTION-3

[3×4]

1. Find the expression of torque on a current-loop in a uniform magnetic field. Write its vector form.
2. Two moving coil meters M_1 and M_2 have following particulars-
(i) $R_1=10\Omega$, $N_1=30$, $A_1=3.6\times 10^{-3} \text{ m}^2$, $B_1=0.25 \text{ T}$
(ii) $R_2=14\Omega$, $N_2=42$, $A_2=1.8\times 10^{-3} \text{ m}^2$, $B_2=0.50 \text{ T}$
Find the ratio of (a) current sensitivities and (b) voltage sensitivities.
3. A circular coil of radius 6 cm and 25 turns carries a current of 10 A. It is suspended vertically in a uniform magnetic field of 1.2 T and the field lines are horizontal in the plane of the coil. Compute torque acting on the coil.
4. In an ammeter 0.2% of main current passes through the galvanometer. If the resistance of galvanometer is G , what will be the resistance of ammeter ?

QUESTION-4

[5×1]

1. A galvanometer gives full scale deflection with 0.006 A current. By connecting it to a 4990Ω resistance, it can be converted into voltmeter of range 0-30 V. If connected to a $\frac{2n}{249} \Omega$ resistance, it becomes an ammeter of range 0-1.5 A. What is the value of n ?

DREAMLAND SCHOOL
CLASS XII (session 2020-21)
BIOLOGY HOME WORK

Chapter 1: Reproduction In Organism

Quick Review of the chapter-

- ❖ In this chapter we learn about one of the common feature of living-being called reproduction.
- ❖ We also study about different types of reproduction- asexual and sexual mode of reproduction.
- ❖ Here we study about some life phase like- Life span- that is a period from birth till natural death of an organism. It is different if different species-

❖ ORGANISM	❖ LIFE SPAN
❖ BUTTERFLY	❖ 1-2 WEEKS
❖ FRUITFLY	❖ 1 MONTH
❖ RICE PLANT	❖ 4 MONTHS
❖ CROW	❖ 15 YEARS
❖ DOG	❖ 15-20 YEARS
❖ BANANA PLANT	❖ 25 YEARS
❖ COW	❖ 25 YEARS
❖ PARROT	❖ 27 YEARS
❖ HORSE	❖ 50 YEARS
❖ CROCODILE	❖ 60 YEARS
❖ ELEPHANT	❖ 75 YEARS
❖ TORTOISE	❖ 100-150 YEARS
❖ BANYAN TREE	❖ 300-500 YEARS

- ❖ WE ALSO STUDY ABOUT AGING AND SENESCENCE AND DEATH.
- ❖ THERE TWO TYPES OF REPRODUCTION. Asexual reproduction if of different types such as-
- ❖ Fission- In Amoeba and Paramecium, a cell divides into two halves and each rapidly grows into an adult by the process called binary fission.
- ❖ Budding- In Yeast, Hydra division is unequal and small are produced that remain attached initially to the parent cell, which, eventually mature separate from the parent body. The complex bud formation is called Torula.
- ❖ Sporulation occurs by tiny, single-celled, thin walled spore which are resistant to the environmental extremes that forms new individual. Monera, Protista, fungi reproduce by this process. Spore can be different types such as zoospore, aplanospore etc.
- ❖ There is also vegetative reproduction that is the process of multiplication in which fragments of the plant body function as propagule and develop into new individual. There are also different ways of that such as --

In onion and ginger- by bulb formation
Agave, Lily- Bulbil Formation
Potato- Tuber or eye
Water hyacinth -offset
Jasmine stolon
Mint, Chrysanthemum- suckers

- ❖ There is also sexual reproduction that involves fusion of the gametes known as fertilisation, after that post fertilisation events that produce new individual.
- ❖ This fertilisation can be external or internal, same way growth of baby can be viviparous (animal giving birth to young ones), oviparous (animals laying eggs), ovoviviparous.
- ❖ Lastly we study about parthenogenesis that is development of egg or ovum into offspring without fertilisation.

- ❖ This of two types Natural Parthenogenesis(occurring in Aphids,lacerta,Gall fly etc) and Artificial parthenogenesis(production of seedless banana, apple etc), we also study there advantages and disadvantages.

Assignment Questions-

A] Define the following terms:

- I. Lifespan
- II. Meicytes
- III. Parthenocarpy
- IV. Syngamy
- V. Zoospore.

B]Name the asxual reproductive structure of the following

- I. Fungi
- II. Penicillium
- III. Hydra
- IV. Sponges

C] Write difference between the following:

- I. Gemmule and spore
- II. External fertilization and internal fertilization
- III. Oviparous animal and viviparous animal
- IV. Menstrual cycle and oestrous cycle
- V. Heterogametes and homogametes

D] answer as directed

- I. What do you mena by unusual flowering ? Expalin with suitable example.
- II. The meicytes of an onion plant contains 32 chromosomes. Work out the number of chromosomes found in its endosperm.
- III. Write difference between isogamy, anisogamy and oogamy with suitable example anf diagram.
- IV. Coconut plant is monoecious while date palm is diecious.Why they are so called?
- V. What are pre-fertilization events explain .
- VI. What do you mean by parthenogenesis? What are types of it-define with example. Mention two advantages and disadvantages of it.
- VII. What are th three major phases in the life cycle of an organism? Define each phase.
- VIII. A moss plant produces a large number of antherozoids but relatively only a few egg cells.

CHAPTER 2 – SEXUAL REPRODUCTION IN FLOWERING PLANTS

BRIEF EXPLANATION –

- Reproduction is necessary for the perpetuation of a species.
- Reproduction in plant is accomplished by the fusion of gametes.
- Sexual reproduction in angiosperms takes place in a specially modified shoot , the flower.
- Sepals and petals are the accessory organs of a flower whereas stamens and carpels are the essential part of a flower.

- Stamen is the male reproductive part of flower and carpel is the female reproductive part.
- A typical stamen consists of filament & anther.
- Each anther contains four microsporangia which produces large number of pollen grains.
- Carpels constitute the gynoecium or pistil.
- A pistil consist of three parts : basal swollen part , the ovary bearing ovules. Tip of the ovary is elongated into the style which ends into sticky stigma.
- Stigma acts as the receptive structure for the pollens.
- Within each ovule a haploid embryo sac usually containing 8 nuclei is formed.
- A fully developed embryo sac contains an egg apparatus , comprising of an egg cell, two synergids towards the micropylar end , three antipodal cells in the chalazal end & two polar nuclei or secondary nucleus.
- The embryo sac is called megagametophyte.
- The process of transfer of pollen grains from anther to stigma of flower is called pollination.
- Pollination is of two types – self & cross.
- In self pollination the pollens are transferred from the anther to the stigma of the same flower or stigma of another flower of same plant.
- In cross pollination the pollens are transferred from the anther of a flower to the sigma of another flower of another plant of same species.
- Cross pollination is brought about by agency of wind, insect, bird, bat, snails.
- The pollen deposited on a stigma as a result of pollination germinate to form pollen tube which penetrates the style.
- Only one pollen tube enters the embryo sac and releases the 2 male gametes.
- One male gamete fuses with the egg to form the zygote (syngamy) and the other fuses with the two polar nuclei to give rise to endosperm. This is called double fertilization.
- After fertilization the ovule develops into a seed, zygote forms the embryo, the primary endosperm nucleus gives rise to the endosperm & the integuments form the seed coat.
- Endosperm develops in three different ways – nuclear, cellular, helobial.
- The ovary after fertilization develops into fruit.
- The fruits are of different types.- true fruit , false fruit
- The formation of fruit without fertilization is called parthenocarpy.

ASSIGNMENT

- 1) Draw a labelled sketch of a section of mature pollen grain.
- 2) What is the fate of the following parts in a fruit – integument, endosperm nucleus , ovule.
- 3) What are false fruit? Give one example.
- 4) What are the advantages of cross pollination over self pollination?
- 5) Explain the events in the embryo sac during the process of fertilization.
- 6) How does development of male gametophyte takes place?
- 7) Trace the development of a megaspore mother cell of a flower into a mature ovule.
- 8) Give characteristics of wind pollinated flower.

COMPUTER SCIENCE

CLASS-12

INHERITANCE

The process by which one class acquires the properties(data members) and functionalities(methods) of another class is called **inheritance**. The aim of inheritance is to provide the reusability of code so that a class has to write only the unique features and rest of the common properties and functionalities can be extended from another class. Inheritance is an important pillar of OOP(Object Oriented Programming)

The idea behind inheritance in Java is that you can create new classes that are built upon existing classes. When you inherit from an existing class, you can reuse methods and fields of the parent class. Moreover, you can add new methods and fields in your current class also.

Inheritance represents the IS-A relationship which is also known as a parent-child relationship.

Terms used in Inheritance

Class: A class is a group of objects which have common properties. It is a template or blueprint from which objects are created.

Sub Class/Child Class: Subclass is a class which inherits the other class. It is also called a derived class, extended class, or child class.

Super Class/Parent Class: Superclass is the class from where a subclass inherits the features. It is also called a base class or a parent class.

Reusability: As the name specifies, reusability is a mechanism which facilitates you to reuse the fields and methods of the existing class when you create a new class. You can use the same fields and methods already defined in the previous class.

The syntax of Java Inheritance

```
class Subclass-name extends Superclass-name
```

```
{  
    //methods and fields  
}
```

The **extends** keyword indicates that you are making a new class that derives from an existing class. The meaning of "extends" is to increase the functionality.

In the terminology of Java, a class which is inherited is called a parent or superclass, and the new class is called child or subclass.

Questions:

1. Define inheritance in java.
2. Why Inheritance is used by Java Programmers?
3. How is sub class differs from super class?
4. Using the concept of inheritance, write a java program :

we have a base class **Teacher** and a sub class **MusicTeacher**. Since class **MusicTeacher** extends the designation and school properties and work() method from base class, we need not to declare these properties and method in sub class. Here we have schoolName, designation and work() method which are common to all the teachers so we have declared them in the base class, this way the child classes like **MusicTeacher** do not need to write this code and can be used directly from base class.

5. How is reusability supported by inheritance?
6. A super class **Perimeter** has been defined to calculate the perimeter of a parallelogram. Define a subclass **Area** to compute the area of the parallelogram by using the required data members of the super class. The details are given below:

Class name : Perimeter

Data members/instance variables:

a : to store the length in decimal

b : to store the breadth in decimal

Member functions:

Perimeter(...) : parameterized constructor to assign values to data members

double Calculate() : calculate and return the perimeter of a parallelogram as $2 * (\text{length} + \text{breadth})$

void show() : to display the data members along with the perimeter of the parallelogram

Class name : Area

Data members/instance variables:

h:to store the height in decimal

area : to store the area of the parallelogram

Member functions:

Area(...) : parameterized constructor to assign values to data members of both the classes

void doarea() : compute the area as $(\text{breadth} * \text{height})$

void show() : display the data members of both classes along with the area and perimeter of the parallelogram.

Specify the class **Perimeter** giving details of the **constructor(...)**, **void Calculate()** and **void show()**. Using the concept of inheritance, specify the class **Area** giving details of the **constructor(...)**, **void doarea()** and **void show()**.

Method	Description
char charAt(int index)	returns char value for the particular index

JAVA STRING

Generally, String is a sequence of characters. But in Java, string is an object that represents a sequence of characters. The java.lang.String class is used to create a string object.

There are two ways to create String object:

1. By string literal
2. By new keyword

Java String class provides a lot of methods to perform operations on strings such as compare(), concat(), equals(), split(), length(), replace(), compareTo(), intern(), substring() etc.

String class methods

The java.lang.String class provides many useful methods to perform operations on sequence of char values.

<code>int length()</code>	returns string length
<code>String substring(int beginIndex)</code>	returns substring for given begin index.
<code>String substring(int beginIndex, int endIndex)</code>	returns substring for given begin index and end index.
<code>boolean contains(CharSequence s)</code>	returns true or false after matching the sequence of char value.
<code>boolean equals(Object another)</code>	checks the equality of string with the given object.
<code>boolean isEmpty()</code>	checks if string is empty.
<code>String concat(String str)</code>	concatenates the specified string.
<code>String replace(char old, char new)</code>	replaces all occurrences of the specified char value.
<code>static String equalsIgnoreCase(String another)</code>	compares another string. It doesn't check case.
<code>String[] split(String regex)</code>	returns a split string matching regex.
<code>String[] split(String regex, int limit)</code>	returns a split string matching regex and limit.
<code>String intern()</code>	returns an interned string.
<code>int indexOf(int ch)</code>	returns the specified char value index.
<code>int indexOf(int ch, int fromIndex)</code>	returns the specified char value index starting with given index.
<code>int indexOf(String substring)</code>	returns the specified substring index.
<code>int indexOf(String substring, int fromIndex)</code>	returns the specified substring index starting with given index.
<code>String toLowerCase()</code>	returns a string in lowercase.

String toUpperCase()	returns a string in uppercase.
String trim()	removes beginning and ending spaces of this string.

Questions:

1. What is string in java?
2. How to create a string object?
3. How to convert string to int?
4. What is special about string objects as compared to objects of other derived types?
5. Which one will you prefer among “==” and equals() method to compare two string objects? Explain.
6. How do you convert given string to char array?
7. A **Palindrome** is a word that may be read the same way in either direction. Accept a sentence in **UPPER CASE** which is terminated by either “ . “ , ” ? ” or “ ! “ . Each word of the sentence is separated by a single blank space.

Perform the following tasks:

- (a) Display the count of palindromic words in the sentence.
- (b) Display the Palindromic words in the sentence.

Example of palindromic words: MADAM, ARORA, NOON

Example:

INPUT : NITIN ARORA USES LIRIL SOAP.

OUTPUT : NITIN ARORA LIRIL

NUMBER OF PALINDROMIC WORDS : 3

8. Write a program to accept a sentence and print only the first letter of each word of the sentence in capital letters separated by a full stop.
Example :
INPUT SENTENCE : “This is a cat”
OUTPUT : T.I.A.C.

ACCOUNTANCY – CLASS XII

PARTNERSHIP-INTRODUCTION

- **MEANING**-According to section 4 of the partnership act,1932 a partnership is **“THE RELATION BETWEEN PERSON WHO HAVE AGREED TO SHARE THE PROFITS OF A BUSINESS CARRIED ON BY ALL OR ANY ONE OF THEM ACTING FOR ALL”.**
- **PARTNERSHIP DEED**-Partnership is an agreement between two or more person ,it is advisable that a partnership deed or partnership agreement ,showing the terms & conditions ,should be drawn up & signed by all the partners .Partnership deed may be entered into orally or written on paper.

A partnership deed generally, includes the following:-

1. The name of the partners & firm under which it is to work.
2. Nature of business.
3. The conduct & powers of the partners.
4. When termination is certain, the term of duration of partnership.
5. Amount of capital to be contributed by each partner.
6. Methods of division of profit or losses.
7. Salary, commission, interest of capital payable to partner.
8. Interest on drawings to be charged on withdrawals.
9. Interest on loan payable to partner.
10. Valuation of goodwill when there is a change in the constitution of the firm.
11. Methods to be followed when there is a change in the constitution of the firm & method of keeping books of accounts.

❖ IN THE ABSENSE OF DEED THE FOLLOWING GUIDELINES SHOULD BE FOLLOWED:-

1. Every partner should share profit equally [sec.13(b)]
2. No interest should be allowed on partners' capital [sec.13(c)]
3. No interest should be charged on the drawings of the partners
4. No salary is to be allowed to any partner
5. Interest on advance made by partners should be provided @6% p.a.
6. Every partner should be to have equal share in the property of the partnership as per section 14

FEATURES OF PARTNERSHIP :-

1. The persons must agree to share the profits or losses of the business
2. The business must be carried on by all or any of them acting for all.
3. The liability of partner's is unlimited .A partner is both jointly and severally liable to third parties.
4. For the formation of a partnership more than one person is requires. For a banking business the maximum number of partner is 10, in other business it is 20.
5. In the eyes of law, partners & the firm are not separate entities.

- **MINORS PARTNER :-**A partners, who has not attained the age of majority is called a minor partner. A minor partner can be admitted only into the benefits of the partnership but is not personally liable, like other partners, for any debts of the firm.

- **THE APPROPRIATION OF NET INCOME :-**

In the case of partnership business, for computing & demonstrating the division of the profit or loss among the partners, a new section, known as profit & loss

appropriation account ,is added to profit and loss account ,which is an essential part of the partnership.

- ❖ ANY AMOUNT PAYABLE TO A PARTNER (except rent) ,SUCH AS INTEREST ON CAPITAL ,INTEREST ON LOAN ,SALARIES ,COMMISSION ,etc., SHOULD BE TREATED AS APPROPRIATION & IT SHOULD NOT BE CHARGED AGAINST PROFIT.

PROFIT AND LOSS APPROPRIATION ACCOUNT FOR THE YEAR.....						
Dr.	PARTICULARS		RS	PARTICULARS		Cr.
	To, Reserve a/c		***	By, Profit and loss a/c		***
	-Transfer to reserve			-Net profit		
	To, Interest on capital			By, Interest on drawings a/c		
	-A	***		-A	***	
	-B	***	***	-B	***	***
	To, Interest on partners loan		***			
	To, Partners salary—A		***			
	To, Partners commission—B		***			
	TO, Share of profits					
	(Balancing figure)					
	■ A	***				
	■ B	***	***			
			***			***

➤ **FIXED AND FLUCTUATING CAPITAL METHOD :-**

Under this method capital accounts of the partners will remain fixed year after year the very beginning except for the introduction of additional capital contributed by partners. Naturally, a separates current account is to be opened where all adjustments like interest on capital, interest on drawings, share of profits etc. will appear in this account along with opening balance of current account will appear in balance sheet.

Dr.	CAPITAL ACCOUNT				Cr.
	A	B		A	B
To, Balance c/d	***	***	By, Balance b/d	***	***
			By, bank (Introduced)		***
	***	***		***	***

Dr.	CURRENT ACCOUNT				Cr.
	A	B		A	B
To, Drawings	***	***	By, Balance b/d	***	***
To, Interest on drawings	***	***	By, Interest on capital	***	***
To, Balance c/d	***	***	By, Interest on loan	***	***
			By, Partners salary	***	***
			By, Partners commission	***	***
			By, Share of profits	***	***
	***	***		***	***

➤ **FLUCTUATING CAPITAL METHOD:-**

Under this method ,the capital account of the partners will fluctuate year after year ,i.e., all the adjustment ,viz, interest on capital, interest on drawings, partners salary, etc. will appear in this account together with the opening balance of capital account. The closing balance of the capital accounts will appear in the liability side of the balance sheet.

Dr.	CAPITAL ACCOUNT				Cr
	A	B		A	B
To, Drawings	***	***	By, Balance b/d	***	***
To, Interest on drawings	***	***	By, Interest on capital	***	***
To, Balance c/d	***	***	By, Partner salary	***	***
			By, Partner commission	***	***
			By, Share of profit	***	***
	***	***		***	***

Qu-1.A & B start a business on 1st jan,15, with capitals of Rs 30000 and Rs 20000.According to the partnership deed, B is entitled to a salary of Rs 500 p.m. & interest is to be allowed on capitals at 6% p.a..The remaining profits are to be distributed amongst the partners in the ratio of 5:3. During 2015 the firm earned a profit, before charging salary to B & interest on capital amounting to Rs 25000.During the year A withdrew Rs 8000 and B withdrew Rs 10000 for domestic purposes. Give journal entries relating to division of profit.

Qu-2.A and B are partners sharing profit and losses in the ratio of their effective capital. They had Rs. 1,00,000 and Rs 60,000 respectively in their capital accounts as on 1st jan,15. A introduced a further capital of Rs 10,000 on 1st apr,15 and another Rs 5,000 on 1st july,15.On 30th September, 15 A withdrew Rs 40,000. On 1st july,15 B introduced further capital of Rs 30,000. The partners drew the following amounts in anticipation of profit. A drew Rs 1,000 p.m. at the end of each month beginning from January,15. B drew Rs 1,000 on 30th June and Rs 5,000 on 30th September,15. 12% p.a. interest on capital is allowable and 10% p.a. interest on drawings is chargeable. Date of closing 31.12.2015. Calculate profit sharing ratio; interest on capital; and interest on drawings.

Qu-3.A, B and C are in partnership sharing profit and losses in the ratio of 2:2:1. It is agreed that interest on capital will be allowed @10% p.a. and interest on drawings will be charged @8% p.a. The following are the particulars of the capital & drawings accounts of the partner.

	A	B	C
Capital (1.1.2015)	75,000	40,000	30,000
Current account (1.1.2015)	10,000	5,000	5,000 (Dr)
Drawings	15,000	10,000	10,000

The draft accounts for 2015 showed a net profit of Rs 60,000 before taking into account interest on capitals & drawings & subject to following rectification of Errors :

- Life insurance premium of A amounting to Rs 750 paid by the firm on 30th June, 15 has been charged to miscellaneous expenditure a/c.
- Repairs of Machinery amounting to Rs 10,000 has been debited to Plant account and depreciation thereon charged @20%.
- Travelling expenses of Rs 3,000 of B for a pleasure trip to U.K. paid by the firm on 30th June, 2015 has been debited to Travelling expense a/c.

You are required to prepare the Profit and loss Appropriation account for the year ended 31st December, 2015.

Qu-4. P and Q are partners in a firm. P is to get a commission of 10% of net profit before charging any commission. Q is to get a commission of 10% on net profit after charging all commission. Net profit before charging any commission was Rs 2,20,000. Find out the commission of P and Q.

Qu-5. A, B, C and D are partners sharing profit and losses in the ratio of 4:3:3:2. Their respective capitals on 31st March, 2015 were Rs 3,000; Rs 4,500; Rs 6,000; and Rs 4,500. After closing and finalizing the accounts it was found that interest on capital @6% p.a. was omitted. Instead of altering the signed accounts it was decided to pass a single adjusting entry on 1st April, 2015 crediting or debiting the respective partners' accounts. Show the journal entries.

Qu-6. Profit and loss Appropriation Account for the year ended 31st March 2015

Dr.		Cr.	
Particulars	Amount	Particulars	Amount
To, Interest on capital :		By, Net profit	40,000
-Dhruva 8% of Rs. 40,000	3,200	By, Interest on drawings	
-Rohini 8% of Rs. 30,000	2,400	(calculated on average of 6	
To, Salary-Dhruva	4,800	months)	
To, Share of profit		-Dhruva 6% of Rs. 8,000	240
-Dhruva (1/2)	15,010	-Rohini 6% of Rs. 6,000	180
-Rohini (1/2)	15,010		
	40,420		40,420

The entries were duly passed in the books but the following discrepancies were subsequently discovered :

- Interest on capital should have been allowed at 6% p.a. and that on drawings should have been charged at 8% p.a.
- Dhruva was not entitled to get any salary but Rohini was to get a monthly salary of Rs. 250
- Profits should have been shared in opening capital ratio.

You are required to redistribute the profits correctly.

Qu-7. A and B were partners of a Beauty Parlour sharing profit and losses as 3:2. C who had been running a similar business as a beauty consultant requested A and B to form a new partnership to which all of them agreed on the condition that :

1. They should share the profit and losses 3:2:1.
2. A and B guaranteed to the effect that C's share of profit would not be lower than Rs. 22,500 p.a.
3. C guaranteed that gross fee earned by her for partnership business shall be at least equal to her average gross fees of the preceding three years when she was doing business on her own. Her average gross fees were Rs. 37,500.

The profit of the new partnership for the first accounting year ended on 31st march 2015 was Rs. 1,12,500 and the gross fees earned by C for the firm were Rs. 24,000.

Show the distribution of the above profit in a Profit and Loss Appropriation Account for the year ended 31st march 2015.

Qu-8. Accounting period :January to December. Interest @12% p.a.

Month	Amount drawn (Rs.)
February	10,000
May	5,000
September	15,000
November	10,000
December	20,000

Calculate the amount of interest on drawings.

Qu-9. Prepare the capital accounts of the partners X and Y under (a) Fluctuate capital method and (b) Fixed capital method from the following particulars :

	X	Y
Capital a/c (on 1.4.2015)	50,000	30,000
Current a/c (on 1.4.2015)	5,000(Cr.)	3,000(Dr.)
Drawings	25,000	15,000
Partner's salaries	10,000	10,000
Partner's commission	8,000	-
Interest on partner's loan	-	3,000
Interest on capital	5,000	3,000
Interest on drawings	2,500	1,500
Share of profit	12,000	12,000

VALUATION OF GOODWILL

- **GOODWILL** : Goodwill is an invisible force that helps a business to earn more than the normal return on investment enjoyed by similar businesses. It is the sum total of the reputation and other favourable attributes built up by a business. It is defined as “the excess of the price paid for a business as a whole over the book value or over the computed or agreed value of all tangible net assets purchased. Normally, goodwill thus acquired is the only type appearing in the books of account and in financial statement.” Goodwill means advantage which arises due to :
 1. Past efforts
 2. Purchased efforts, and
 3. Locational efforts.

- **Need for valuing Goodwill** :
 1. When there is a change in the profit-sharing ratio.
 2. When a new partner is admitted.
 3. When a partner retires or dies.
 4. When partnership firm is sold as a going concern.
 5. When two or more firms amalgamate.
 6. When a partnership firm is converted into a company.

- **Types of Goodwill** :
 - A. **Purchased Goodwill** : It is the excess amount payable over the fair value of the separable net assets acquired from another person or business. It arises when one business buys another and the purchase consideration paid is more than the value of the net tangible assets received. It can never exist in a new business except by purchase.

Features :

 - a. It arises on an acquisition.
 - b. It is demonstrated by a purchase transaction.
 - c. Price paid for goodwill depends upon the purchaser’s expectation of future profits.
 - d. Value of goodwill is a subjective assessment but it is ascertained when both purchaser and seller agree to its valuation.
 - e. It is amortised at the earliest but not later than its useful life.

 - B. **Inherent or Non-purchased Goodwill** : It is a good name built up over years and generated internally by a business. It is not reflected by a financial accounts or by the purchase consideration. Its valuation depends on the subjective judgement of the valuer. Factors like superior management, sales policies, good public image, etc., contribute towards the development of this type of goodwill.

Features :

- a. It is internally generated.
- b. A cost can't be placed on these types of goodwill.
- c. Valuation depends on subjective judgement of the vauer.
- d. It is not demonstrated by a purchase consideration.
- e. It is never recognised in financial statements.

➤ **Methods of valuation of goodwill :**

A. Average profit method :

- a. Simple average profit method :

Goodwill = Average normal (or future maintainable) profit X No. of Years' purchase.

- b. Weighted average profit method :

Goodwill = Weighted average profit X No. of Years' purchase.

B. Super profit method :

Goodwill = Super profit X No. of years of purchase.

Note : Super profit = Actual average profit – Normal profit

Normal profit = Average Capital Employed X Normal Rate of Return(NRR).

C. Capitalisation method:

- a. Capitalisation of average profit method : (may be simple or weighted)

Goodwill = Capitalised Value of the Business – Net Assets

Note :

1. Capitalised value of the business = Avg. Profit / NRR (%)

2. Net Assets = All assets (other than goodwill, Non-trade investment and fictitious assets) at their current values *minus* Outside liabilities.

- b. Capitalisation of super profit method :

Goodwill = Super Profit / NRR (%)

➤ **Future maintainable profit (FMP) : (Past profit methods)**

Profit before tax	***
-/+ Abnormal item (won't occur in future)	***
-/+ Non-recurring items (profit or loss on sale of Asset)	***
-/+ Rectification of errors (we need corrected profits)	***
-/+ Effects of changes in Accounting policies (Profit should be as per new policies)	***
-/+ Revaluation of current assets / current liabilities (Goodwill should be based on correct value)	***
-/+ Goodwill amortization	***
- Non-operating income	***
+ Non-operating expenses	***
- Partners remuneration or management cost (if it is not deducted)	***
(Applied AS-4)	
FMP	***

- Some important notes kept in mind while computing Capital Employed :
 1. All assets and liabilities should be after revaluation, rectification and after change in accounting policies.
 2. Sundry assets should not include Goodwill, Non-trade assets and Fictitious assets.
 3. Sundry liabilities does not include proposed dividend.

➤ Practical problems :

1. A and B are partners sharing profits in the ratio of 3:2. They decided to admit C as a partner from 1st April,2020 on the following terms :
 - a. C will be given 2/5th share of profit.
 - b. Goodwill of the firm will be valued at two years' purchase of three years' normal average profit of the firm.

Profits of the previous three years ended 31st march, were :

2020 – Profit Rs. 30,000 (after debiting loss of stock by fire Rs. 40,000).

2019 – Loss Rs. 80,000 (includes VRS paid Rs. 1,10,000).

2018 – Profit Rs. 1,10,000 (including a gain of Rs. 30,000 on the sale of fixed assets).

You are required to value the goodwill.

2. Calculate the goodwill of a firm on the basis of three years' purchase of the weighted average profit of the last four years. The appropriate weights to be used and profits are :

Year	2016-17	2017-18	2018-19	2019-20
Profits	1,01,000	1,24,000	1,00,000	1,40,000
Weights	1	2	3	4

On a scrutiny of the accounts, the following matters are revealed :

- a. On 1st December, 2018, a major repair was made in respect of the plant incurring Rs. 30,000 which was charged to revenue. The said sum is agreed to be capitalised for goodwill calculation subject to adjustment of depreciation of 10% p.a. on Reducing Balance Method.
- b. The closing stock for the year ended 31st March, 2018, was overvalued by Rs. 12,000.
- c. To cover management cost, an annual charge of Rs. 24,000 should be made for the purpose of goodwill valuation.
- d. On 1st April, 2017, a machine having a book value of Rs. 10,000 was sold for Rs. 11,000 but the proceeds were wrongly credited to profit and loss account. No effect has been given to rectify the same. Depreciation is charged on machine @ 10% p.a. on Reducing Balance Method.

3. From the following information, calculate the value of goodwill of M/s Ram & Rahim :
- At three years' purchase of Average profit.
 - At three years' purchase of super Profit.
 - On the basis of Capitalisation of Super Profit.
 - On the basis of Capitalisation of Average Profit.

Information :

- Average capital employed in the business – Rs. 7,50,000.
- Net trading results of the firm for the past years: Profit for 2017 – 18 Rs.
2,25,000; Loss for 2018 – 19 Rs. 1,87,500; Profit for 2019 – 20 Rs. 6,37,500.
- Rate of interest expected from capital having regard to the risk involved – 15%.
- Remuneration to each partner for his service treated as a charge on profits – Rs.
3,750 per month.
- Assets (excluding goodwill) – Rs. 9,00,000; Liabilities – Rs. 75,000.

Sociology (class XII)

Chapter – Social Institutions

- Social Institution is a complex integrated set of social norms organized around the preservation of a basic societal value.

Types of Social Institutions

A) Kinship – People having “common blood” relation and having a common ancestor are the kins. Rivers defined kinship is the social recognition of biological ties.

Two types of kinship – i) Affinal kinship determined by martial relation between man and woman ii) Consanguineous kinship defined by blood relationship between parent and children and also among siblings.

B) Marriage – It is a social Institution which sanctifies man-woman - children relationship as the primary unit of societal structure.

C) Family – A family is a domestic group in which parents & children live together.

D) Religion – Religion consists of beliefs and practices. Social experiences are recorded into rules of religion and regularised or popularised through practices.

Home work –

- i) What is Social Institution?
- ii) What is kinship?
- iii) Define two types of kinship.
- iv) Define Marriage.
- v) Define Family.
- vi) Define Religion.

Chapter – Religion and Society

E.B.Tylor defined religion : “ Religion is the belief in supernatural beings.” According to Durkheim “ religion at it’s most profound level means society's worship of itself.”

- Beliefs - Durkheim's social theory of religious life provides that religion is mainly composed of 'belief' and 'rites' i.e 'beliefs' about sacred things and rites addressed to them.
- Rituals- It is understood as the practical aspect of religion. Religious beliefs are concerned with sacred things ,their origin,behaviour and and significance for man, while the rituals are actions performed in relation to those sacred things.
- Taboo – The word taboo has been taken from Polynesian vocabulary ,meaning 'to forbid' and 'forbidden'.

Theories of Religion

A) Animism , b) Totemism, c) Naturism, d) Animatism

Home work

- i) Define religion according to E.B.Tylor.
- ii) What is taboo?
- iii) What is rituals?
- iv) What is beliefs?
- v) Explain the term religion according to Durkheim.
- vi) Name the different theories Of religion.

History

World History - 1st Chapter:

After World War 1 the League of Nations was formed to maintain peace & security in the world but it failed. There had been various factors behind its failure & this organisation failure along with other reasons like annexation of Austria, intervention in Czechoslovakia, Rome Berlin Tokyo Axis etc led to the outbreak of the war of 1939. Many battles were being fought throughout the globe as for example Battle of Britain, Dunkirk incident etc. It is to be remembered that US entry into this war completely changed the scenario & it had one of the prime factors behind the defeat of the Axis Powers along with other causes like shortage of raw materials on the side of the Axis group as well as Hitler & his advisers lack of assessing the power of Britain & its colonies.

Questions:

- 1) What had been the Scorched Earth Policy?
- 2) Define- Island Hopping.
- 3) What do you understand by Phoney War?
- 4) Who was known as Desert Fox?
- 5) State the importance of the Dunkirk Incident.

"We the people of India solemnly resolved to constitute India into a Sovereign, Socialist, Secular, Democratic & Republic and to secure to all citizens Justice, Liberty, Equality, Fraternity. In our constituent assembly on 26th of November 1949 we do hereby adopt enact and give to ourselves this Constitution."

The ideologies which are the background of Constitution are being told in the Preamble. Sovereign- We are a free country without the dominance of any external power. Socialist- Every aspect of our country is dealt equally for the every section of our society.

Secular-Our country has no official religion.

Democratic-We have an elected government.

Republic-All the posts in the government are based on election its not a hereditary one.

Justice-The maintenance/administration of everything is as per law(neutrally)

Liberty-Freedom of your own thought,speech & religion

Equality-Everyone is equal in the eyes of law.

Fraternity-Brotherhood.

Questions:

1. Define the word Socialist.
2. State the importance of Preamble as part of the Constitution.
3. Mention the date of adopting & enacting the Constitution.

INDIAN HISTORY - 1st Chapter:

With the influence of M.N.Roy the Communist Party of India was founded outside the country at Tashkent Russia in 1920. Gradually communist or Socialist ideas started spreading in India & after an All India Conference of the Communists at Kanpur, the Communist party of India began working in India from December 1925. Jawaharlal Nehru was highly influenced by the Socialist Principles & learned the economic activities of the Soviet Union. The election of Nehru & Netaji as the President of the Congress party paved the way for the inclusion of socialist ideas inside the party. Point to be noted is that although the workers & peasants joined Congress in large numbers but Congress Socialist ideas were different from the Communists. Gradually trade union took its birth in India.

Questions:

- a) Name the two Congress leaders who were influenced by Socialist ideas.
- b) Write a short note on trade union activities during 20th century.
- c) Who was M.N.Roy?
- d) State any two objectives of the Kisan Sabha.
- e) Mention any two reasons as to why did the peasants revolted against the authority?

Geography

Chapter 1 - Locational Setting of India

Location setting - area, latitudinal and longitudinal extent of India:-

India extends from 8°4' North to 37° 6' north latitude and 68° 7' East To 97 ° 25' East longitude. the southernmost point of India in the Andaman and Nicobar Islands is the Indira Point. the longitudinal difference between the Saurashtra in the west and Arunachal Pradesh in the East is about 30°. a difference of 1° longitude will make a difference of 4 minutes in time . thus the difference of local time between these two places is 2 hours. Tropic of Cancer passes through the middle of this country.

importance of location:-

India stands at the head of Indian Ocean. and the name of this ocean is given after the name this country . the position of India over Indian Ocean helps in trading and exchanging culture .

comparision with china and australia:-

China is the 3rd largest country of the world on the other hand India is the 7th largest country in the world.

Australia is the smallest country in the world. and Tropic of Capricorn passes through the middle of this country .

Home Assignment :-

1. State the longitudinal and latitudinal extent of India.
2. Write any one similarity and dissimilarity between India and Australia.
3. Name the southernmost point of India.
4. Why Indian Ocean name after India?
5. What is the time difference between Saurashtra and Arunachal Pradesh? what is the reason behind it?

Chapter 2- Geological Evolution and Structure:-

India is composed three geological units:

1) the peninsular plateau 2) the Himalayan mountains and 3) the indo-gangetic plains.

the peninsular plateau:- the southernmost part of India consists of an old plateau which is known as Southern plateau or Peninsular plateau Why southern plateau is also known as because it is surrounded by sea on the three sides. this table land has believed as a rigid and inflexible block throughout the geological history and is often compared to a horst. it is considered as a part of Indo Australian plate that has subjected to vertical movement and block faulting which is also known as gondwanaland.

The Himalayas :-

it is the young fold mountain range situated at the North side of India. Formation of it can be explained with the help of plate tectonic theory. the collision of the plates leads to the building of young fold mountains like Himalayas.

The difference between Peninsular plateau and Himalayan regions are as follows

1) Peninsular plateau are old mass of Hard Rocks but Himalaya is a young fold mountain but Himalaya is a young fold mountain.

2) Peninsular plateau is a tableland is often compared to a horst. but Himalaya is a chain of fold mountains formed due to the tectonic uplift.

The Indo Gangetic plain:-

in between the Himalayas in the north and Peninsular plateau in the south it lies in North India. the deposition of rivers in Tehys sea give rise to the formation of it.

Home Assignment:-

1. Why southern plateau is also known as Peninsular plateau?
2. What are the difference between Peninsular plateau and Himalayan mountains?
3. How did the great indo-gangetic plain formation take place?
4. How many geological units are there in India? Name them.
5. What is the another name of Peninsular plateau?

Mathematics

Home Assignment 1- Matrix definition, addition, subtraction, multiplication Equality of matrix, different types of matrix, transpose of matrix, symmetric and skewsymmetric matrix, orthogonal matrix. Identity and inverse of matrix. Linear equation solve by matrix method.

Home assignment 2-Determinant -Property of determinant. Find the value of determinant without expanding, and find out the value of determinant use by the property. Solving of determinants.

Hw-Linear equation solve by matrix method any 5. And find the value of determinant without expanding any 5.