

Class 12 Business Studies

Ch-13 Emerging Trends in Human Resource Management:

- Q1: What do you mean by emerging trends in human resource management?
- Q2: What are the advantages of emerging trends in human resource management?
- Q3: What are the disadvantage human resource management?
- Q4: Write and explain about at least 5 emerging trends in human resource management?

class XII
व्याकरण

* सूत्रों के लक्षण :-

- १) अपसादस्युक्त अर्थात् मन्त्रेणोपसमाहारः।
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Class 12 Economics

Ch-4 Elasticity of Demand

- Q1: What are the factors that effect the price elasticity of demand?
- Q2 How elasticity of demand important for making business decisions?
- Q3: How elasticity of demand important for determining the factor prices?
- Q4: How price elasticity of demand effects in the formulation of government policies?
- Q5: How price elasticity of demand is important for international trade?

Class 12 (History) 7/5/20

Chapter: Decolonisation (Thursday Class)

In 1920's when UK started indirect rule in the Gold Coast area opposition of the nationalists started & by 1940's the movement achieved its peak. J. Danquah founded the UGCC & asked Nkrumah to lead it for self government, but both of them were arrested. In 1949 the CPP was led by Nkrumah & a new Constitution was proposed but K. Busia of NLM opposed it. The NLM wanted a federal state while CPP vouched for an unitary one. When the election happened CPP won & Nkrumah became the Prime Minister.

Questions:

- a) Which event helped the nationalist movement for independence to gain momentum?
- b) Write the full form of CPP & UGCC.
- c) State the date of Ghana's independence.

Class12 (Political Science) Date-7/5/20 Class-thursday.

Chapter: Salient Features of Indian Constitution

The constitution of India is a product of 20th century & is unique in many aspects. It owes all its qualities to the founding fathers who in turn depended on various other constitutions to frame what is best for us. The Indian Constitution became operational on 26th January 1950. Sources of the Indian Constitution had been many but it is to be noted that the framers did not copied blindly they borrowed that much only which was going to tune in with our conditions. The freedom struggle wanted independence but at the same time talked about Unity, quality, Justice, S ecularism etc. UK's Constitution inspired for parliamentary & Bicameral government; while US Constitution gave us Judicial Review & Fundamental Rights. The Irish Constitution influenced for DPSP whereas Germany for Emergency Provisions. T he Government of India Act 1935 also influenced the framers both in positive & negative way. Negatively it abolished the concept of Communal Electorates & Positively it talked about division of powers between Union & States.

Questions:

- a) Explain how the National Liberation Movement inspired our framers.
- b) State 2 positive & negative influence of Government of India Act of 1935 on Indian Constitution.

Date: / /

DREAMLAND SCHOOL

Class: XII
Subject: ART paper - 1

Objects required:

One school bag with
some books.

Arrangement:

The school bag
must be partially
open to reveal
some books inside.

Care should be taken
that objects are
clearly visible.

DREAMLAND SCHOOL

Class: XII

Subject: ART Paper 5

Make a creative poster for Rabindra Jayanti. Give a suitable title of your choice. Use an attractive colour scheme to make the poster. Venue, date and time should also be incorporated into your design.

DREAMLAND SCHOOL

Class : XII

Subject : ART Paper - 4

A music competition is on in your school. A music group is getting ready behind the scenes tuning their instruments and arranging their paraphernalia .

Sociology

Date – 07.05.2020

Class – XII

Political Organization

Empowerment of Women:

All over the world and particularly in south and East Asia the gender problem has loomed large during the current years. The gender issue has become a crucial point of argument. The United Nations, in its various declarations, have made it clear that women now cannot be asked to wait for any more time. Their sufferings are historical.

Thus, the gender problem, in the context of new forces of development, assumes vital importance. Underline the problem of the empowerment of women is the plea for shared responsibility between the male and female. The simplest way to distinguish between sex and gender is to define sex as biological and, therefore, given and gender as socially and culturally constructed and, therefore, variable over space and time.

Whereas multiple sexual encounters for men are seen as the sign of their virility, menstruation for women is seen as polluting in many cultures. Actually gender is constructed in part through the organisation of our culturally experienced bodies.

The gender disabilities are, therefore, not uniform all over the country. There are regional variations in the power status of the women. For instance, in north India, there is much discrimination against women. There is a limited public space for them. Young girls are not allowed to move freely.

However, such a hard discrimination is relatively lesser in the southern states. In Kerala, because of the high rate of literacy, there is least discrimination against the women. However, in Tamilnadu, there are instances of female infanticide. On a broader plane it could be said that all over India and generally in south-east Asia there is much discrimination against the women.

They are considered to be a weaker section of society. Such a state of socio-economic affairs warrants for a plan to give special political status to the women. The 73rd Constitution Amendment Act has made an effort to give some special powers to women in all the three tiers of Panchayati Raj.

It is argued that women have acquired some improvement in their social and economic life. There was a time in the earlier part of 1930s when Bombay University did not allow a woman to take courses in graduation. The candidate was informed that the university rules did not permit women to take admission in graduate courses.

The framers of 73rd Constitution Amendment Act had the argument that social and economic status of women could not be improved much without political power. The females in the village need to be given some political power. They should have their share in the decisions made about the development of their village. The new Panchayati Raj is a part of the effort to empower the women at least at the village level.

The reservation of one-third seats for women along with the scheduled castes and the scheduled tribes is, therefore, a bold step towards the empowerment of women. It is quite interesting that the women who have been working as farm labourer, cleaning the utensils and fetching the water, are legally permitted to share the jajam with the males of the village in matters of decision making. The provisions of Act for the women are in no way less than a revolution. But the question remains to be answered: Why do the women require empowerment?

Efforts to empower women are not statutory only. Women are empowered through women emancipation movement, education, communication, media, political parties and general awakening. The Panchayati Raj effort of empowerment is one of the several efforts made simultaneously in the society. And, above all, the empowerment action, whether to women or poor and weaker sections of society, has a multiplying effect.

For instance, when a woman in the village gets a berth in the Panchayat Samiti, she becomes automatically powerful in the family, kin and village. She is listened to by the people, for she is a decision maker; she can do and undo certain things in the village.

She can get her school raised to higher standard; she can get a water pump installed at a particular place in a village and so on and so forth. Surely, she is not everything by becoming member of the samiti but definitely she can influence the decisions of the samiti.

some of the reasons which explain the need for the empowerment of women:

1. Health:

One of the reasons for empowerment is health. It is found that women suffer from poor health condition. There is a general practice in India that the women first serve food to the male members of the family, then comes the turn of children and finally they take food whether it is adequate or not. They have to bear children and they do not get the required calories which are desirable for pregnant women. Thus, the women suffer in the matter of health because of the surrounding cultural and social set-up.

In the matter of medical treatment also the women are sufferers. We have enough research evidence which shows that both women and children are discriminated against medical treatment. Bidyut Mohanty, for instance, referring to the neglect of women and children health, observes:

With regard to health care, discrimination against females is also reflected in the type and relative frequency in utilising the same. The data show males receive better medical treatment than females in all age groups but this is more prominent in case of children.

Mohanty further providing evidence to his generalisation says that even in Punjab the second girl child is often neglected in terms of Medicare. He argues that “this kind of discrimination against women cuts across castes and classes.

Even though there are monetary transactions among the low caste women which are kept hidden from the male family members, these do not go very far in enhancing their social power. Though they are slightly better placed in this respect than, the lower middle class women.

However, women in Kerala are better off compared to their counterparts in other states of the country. Such a state of Kerala women is explained by the fact that in this state the rate of women literacy is very high.

2. Literacy:

The need for empowerment is also for the poor state of illiteracy among women. In absence of literacy and education the women have to suffer a lot. They work in the fields, but the fields legally do not belong to them; they live in and work for the upkeep of a house which does not belong to them. It is a real tragedy.

In 50 per cent of the states the sex ratio is below the national average. With regard to women literacy rate, only 39 per cent of the total female population above seven years of age is literate. In some of the northern states female literacy rate is much below the national average. For example, the female literacy rate in rural Rajasthan is only 12 (Census of India, 1991). Besides, so far as the school enrolment is concerned, there is a huge gap between boys and girls.

Of course, recently, the life expectancy at birth of females has exceeded marginally to that of males. This can be explained in terms of more females in the age group of 60 and above compared to males. However, in the younger age groups, the female mortality rate has been higher than that of males leading thereby to a missing 100 million women in successive censuses.

3. Economic:

Economically too, women all over the country are weak. They are dependent on males, the latter being their bread-earner. Only a small proportion of women are gainfully employed. They are also culturally so much dominated by the males that they cannot take any decision against the wishes of the males. A female is boss in the office but she is subordinate mistress while in the house.

4. UN Declaration and Women's World Congress:

Empowerment of women is not only a regional matter. The UN declaration of 1975 compelled the national government to shift its emphasis on women's programmes from welfare to development. Earlier to this declaration the national governments including our own floated a large number of welfare programmes for the women. But these programmes do not provide any long-term solution to the problems of women. And, therefore, the declaration prescribed for the development of women.

Yet another effort made towards empowerment of women is the document released in 1985 after the Women's World Congress at Nairobi. Following this

conference a national document was prepared laying down forward-looking strategies for women's development. In this document, the question of women political participation was highlighted and it was recommended that 35 per cent of the total seats should be reserved for women.

It was also recommended that some posts should be reserved for women at the block and village level bureaucracy. On the economic front, a number of income-generating schemes were introduced for women. In addition provisions were also made to keep certain proportion of women as beneficiaries in all the developmental schemes like Integrated Rural Development Programme (IRDP), Jawahar Rozgar Yojana (JRY), and Training of Rural Youth and Self-Employment (TRYSEM).

Thus, we find a host of national and international events, coupled with the complex social and economic factors influencing the decisions as regards the status of women, culminating in the reservation of 33.3 per cent of the total seats for them at the panchayat level.

5. Atrocities:

Much injustice is done to women all over the country. There is female infanticide observed in different parts of the country. The motivation to get a son is so strong that girl children before they are even born are killed in the womb. Such a practice is found even in metropolitan cities like Delhi and Mumbai.

There is striking evidence from Bihar where midwives are hired for killing female babies on payment of only Rs. 60 and a saree only. There are cases of rape, dowry, deaths and incest sex relations. Women in all walks of their life are discriminated against men. They are victims of atrocities. As observed earlier, the need for female empowerment was never as urgent as it is today. The 73rd Constitution Amendment Act is just only one step towards the development of women.

Home Work –

1. Briefly explain the term Women Empowerment in your own words.
2. Explain the reasons behind Women Empowerment?

Accountancy Class XII

Retirement of a Partner (Part – 4)

Illustration 11 (With GST).

A, B and C are partners sharing profits in the ratio of 4 : 3 : 1. Their Balance Sheet as at 31st March, 2018 is given below:

Liabilities	₹	Assets	₹
Creditors	1,40,000	Cash in Hand	20,000
Bills Payable	30,000	Cash at Bank	1,50,000
Workmen Compensation Reserve	20,000	Stock	75,000
General Reserve	80,000	Debtors	1,30,000
Capital A/cs:		Less: Provision for Doubtful Debts	5,000
A	2,00,000	Car	2,50,000
B	3,00,000	Plant and Machinery	1,20,000
C	2,00,000	Building	2,30,000
	7,00,000		
	9,70,000		9,70,000

On 1st April, 2018, B retired from the firm selling his share of profit to A for ₹ 36,000 and to C for ₹ 45,000. For the purpose of B's retirement, it was agreed that:

- Stock is to be appreciated by 20% and Building by 10%.
- Provision for Doubtful Debts is increased to 10%.
- Claim on account of Workmen Compensation is ₹ 12,000.
- Revaluation Expenses were ₹ 5,000 plus CGST and SGST @ 9% each and were paid.
- Car was valued at ₹ 3,05,000 and was given to B in part settlement of his dues. CGST and SGST were charged @ 9% each.
- Amount due to B is to be settled on the following basis:
50% on retirement and the balance 50% within one year.
- Capital of the newly constituted firm is fixed at ₹ 6,00,000 to be divided between A and C in new profit-sharing ratio. Adjustment is to be made in cash.

Calculate New Profit-sharing Ratio and prepare Revaluation Account, Partners' Capital Accounts and Balance Sheet of the new firm.

Solution:

Calculation of New Profit-sharing Ratio:

B's share is $\frac{3}{8}$ which he is surrendering in favour of A and C in the ratio of ₹ 36,000: ₹ 45,000 or 4 : 5.

Therefore A will get $\frac{4}{9}$ of $\frac{3}{8} = \frac{1}{6}$ and C will get $\frac{5}{9}$ of $\frac{3}{8} = \frac{5}{24}$.

Total share of A in the new firm will be: $\frac{4}{8} + \frac{1}{6} = \frac{16}{24}$ or $\frac{2}{3}$.

Total share of C in the new firm will be: $\frac{1}{8} + \frac{5}{24} = \frac{8}{24}$ or $\frac{1}{3}$.

New Profit-sharing Ratio of A and C = 2 : 1.

REVALUATION ACCOUNT			
Dr.		Cr.	
Particulars	₹	Particulars	₹
To Provision for Doubtful Debts A/c	8,000	By Stock A/c	15,000
To Cash A/c (Revaluation Expenses)	5,000	By Building A/c	23,000
To Gain (Profit) transferred to:		By B's Capital A/c (Gain on Car)	55,000
A's Capital A/c	40,000		
B's Capital A/c	30,000		
C's Capital A/c	10,000		
	80,000		
	93,000		93,000

PARTNERS' CAPITAL ACCOUNTS							
Dr.				Cr.			
Particulars	A ₹	B ₹	C ₹	Particulars	A ₹	B ₹	C ₹
To B's Capital A/c (WN 1)	36,000	—	45,000	By Balance b/d	2,00,000	3,00,000	2,00,000
To Car A/c	—	2,50,000	—	By General Reserve A/c	40,000	30,000	10,000
To Revaluation A/c	—	55,000	—	By A's Capital A/c (WN 1)	—	36,000	—
To Output CGST A/c	—	27,450	—	By C's Capital A/c (WN 1)	—	45,000	—
To Output SGST A/c	—	27,450	—	By Revaluation A/c	40,000	30,000	10,000
To Bank A/c	—	42,050*	—	By Workmen Compensation Reserve A/c	4,000	3,000	1,000
To B's Loan A/c	—	42,050*	—	By Bank A/c (Bal. Fig.)	1,52,000	—	24,000
To Balance c/d (WN 2)	4,00,000	—	2,00,000				
	4,36,000	4,44,000	2,45,000		4,36,000	4,44,000	2,45,000

*50% of ₹ 84,100, i.e., Amount due to B.

**BALANCE SHEET as at
1st April, 2018 (After B's Retirement)**

Liabilities	₹	Assets	₹
Creditors	1,40,000	Cash in Hand	14,100
Bills Payable	30,000	Cash at Bank	2,83,950
Output CGST	27,450	Input CGST	450
Output SGST	27,450	Input SGST	450
Workmen Compensation Claim	12,000	Stock	90,000
B's Loan	42,050	Debtor	1,30,000
Capital A/cs:		Less: Provision for Doubtful Debts	13,000
A	4,00,000	Plant and Machinery	1,20,000
C	2,00,000	Building	2,53,000
	8,78,950		8,78,950

Working Notes:

1. B sold his share to A and C in the ratio of 4 : 5. The consideration of ₹ 36,000 and ₹ 45,000 will be credited to B's Capital Account and the respective amount will be debited to A's and C's Capital Accounts respectively.

2. Total Capital of the New Firm is ₹ 6,00,000. New Profit-sharing Ratio is 2 : 1.

A's Share of Capital = ₹ 6,00,000 × 2/3 = ₹ 4,00,000

C's Share of Capital = ₹ 6,00,000 × 1/3 = ₹ 2,00,000

After all adjustments, A's Capital will be ₹ (2,00,000 + 40,000 + 40,000 + 4,000 - 36,000) = ₹ 2,48,000.

Therefore, A will bring in (₹ 4,00,000 - ₹ 2,48,000) = ₹ 1,52,000.

After all adjustments, C's Capital will be ₹ (2,00,000 + 10,000 + 10,000 + 1,000 - 45,000) = ₹ 1,76,000.

Therefore, C will bring in (₹ 2,00,000 - ₹ 1,76,000) = ₹ 24,000.

3. Journal entry for Car given to B will be:

		₹	₹
B's Capital A/c	...Dr.	3,59,900	
To Car A/c			2,50,000
To Revaluation A/c			55,000
To Output CGST A/c			27,450
To Output SGST A/c			27,450
(Being Car given to B at ₹ 3,05,000 plus CGST and SGST)			

4. Journal entry for Revaluation Expenses:

		₹	₹
Revaluation A/c	...Dr.	5,000	
Input CGST A/c	...Dr.	450	
Input SGST A/c	...Dr.	450	
To Cash A/c			5,900
(Being Revaluation Expenses plus CGST and SGST paid)			

5. Cash in Hand:

	₹	₹
Opening Balance		20,000
Less: Revaluation Expenses	5,000	
Input CGST	450	
Input SGST	450	
	5,900	14,100
		20,000

6. Cash at Bank:

	₹	₹
Opening Balance		1,50,000
Add: Amount Brought by:		
A		1,52,000
C		24,000
		3,26,000
Less: Paid to B		42,050
		2,83,950

Master Questions

Illustration 12.

The Balance Sheet of Hari, Sonu and Zubin who were sharing profits in the ratio of 5 : 3 : 2 as at 31st March, 2019 is as below:

Liabilities	₹	Assets	₹
Creditors	50,000	Cash at Bank	40,000
Employees' Provident Fund	10,000	Sundry Debtors	1,00,000
Profit and Loss A/c	85,000	Stock	80,000
Workmen Compensation Reserve	10,000	Fixed Assets (Tangible)	60,000
Capital A/cs:		Goodwill	5,000
Hari	40,000	Advertisement Suspense A/c	5,000
Sonu	62,000		
Zubin	33,000		
	1,35,000		
	2,90,000		2,90,000

Hari retired on 1st April, 2019 and Sonu and Zubin decided to share profits in future in the ratio of 2 : 3 respectively.

The other terms on retirement were as follows:

- (i) Goodwill of the firm is to be valued at ₹ 80,000.
- (ii) Fixed Assets (Tangible) are to be reduced to ₹ 57,500.
- (iii) Make a Provision for Doubtful Debts at 5% on Sundry Debtors.
- (iv) A claim, included in Creditors for ₹ 10,000, is settled at ₹ 8,000.

The amount to be paid to Hari by Sonu and Zubin in such a way that their capitals are proportionate to their profit-sharing ratio and leave a balance of ₹ 15,000 in the Bank Account.

Prepare Revaluation Account and Partners' Capital Accounts.

Solution:

REVALUATION ACCOUNT			
Dr.	₹	Cr.	₹
To Fixed Assets A/c	2,500	By Creditors A/c	2,000
To Provision for Doubtful Debts A/c	5,000	By Loss on Revaluation transferred to:	
		Hari's Capital A/c	2,750
		Sonu's Capital A/c	1,650
		Zubin's Capital A/c	1,100
	7,500		5,500
	7,500		7,500

PARTNERS' CAPITAL ACCOUNTS							
Dr.	Hari (₹)	Sonu (₹)	Zubin (₹)	Cr.	Hari (₹)	Sonu (₹)	Zubin (₹)
To Revaluation A/c (Loss)	2,750	1,650	1,100	By Balance b/d	40,000	62,000	33,000
To Hari's Capital A/c	...	8,000	32,000	By Workmen Compensation Reserve A/c	5,000	3,000	2,000
To Goodwill A/c	2,500	1,500	1,000	By Sonu's Capital A/c	8,000	...	...
To Advertisement Suspense A/c	2,500	1,500	1,000	By Zubin's Capital A/c	32,000	...	...
To Bank A/c	1,19,750	...	...	By Profit and Loss A/c	42,500	25,500	17,000
To Balance c/d (WN 3)	...	79,000	1,18,500	By Bank A/c	-	1,150	1,01,600
				(Balancing Figure)			
	1,27,500	91,650	1,53,600		1,27,500	91,650	1,53,600
	1,27,500	91,650	1,53,600		1,27,500	91,650	1,53,600

Working Notes:

1. **Gain/Sacrifice** = New Share – Old Share

$$\text{Sonu's Gain} = \frac{2}{5} - \frac{3}{10} = \frac{1}{10}; \text{ Zubin's Gain} = \frac{3}{5} - \frac{2}{10} = \frac{4}{10}$$

Gaining Ratio = 1 : 4.

2. Hari's Share of Goodwill = ₹ 80,000 × $\frac{5}{10}$ = ₹ 40,000 to be contributed by Sonu and Zubin in their gaining ratio.

3. **Total Capital of the New Firm** = Adjusted Capital of All Partners – Cash Available for Payment

$$\begin{aligned} \text{Hari's Adjusted Capital} &= ₹ 40,000 + ₹ 5,000 + ₹ 8,000 + ₹ 32,000 + ₹ 42,500 - ₹ 2,750 - ₹ 2,500 - ₹ 2,500 \\ &= ₹ 1,19,750. \end{aligned}$$

$$\begin{aligned} \text{Sonu's Adjusted Capital} &= ₹ 62,000 + ₹ 3,000 + ₹ 25,500 - ₹ 1,650 - ₹ 1,500 - ₹ 1,500 - ₹ 8,000 \\ &= ₹ 77,850. \end{aligned}$$

$$\begin{aligned} \text{Zubin's Adjusted Capital} &= ₹ 33,000 + ₹ 2,000 + ₹ 17,000 - ₹ 1,100 - ₹ 32,000 - ₹ 1,000 - ₹ 1,000 \\ &= ₹ 16,900. \end{aligned}$$

$$\text{Cash Available for Payment} = ₹ 40,000 - ₹ 8,000 - ₹ 15,000 = ₹ 17,000$$

$$\text{Total Capital of New Firm} = ₹ 1,19,750 + ₹ 77,850 + ₹ 16,900 - ₹ 17,000 = ₹ 1,97,500$$

$$\text{Sonu's New Capital} = ₹ 1,97,500 \times \frac{2}{5} = ₹ 79,000$$

$$\text{Zubin's New Capital} = ₹ 1,97,500 \times \frac{3}{5} = ₹ 1,18,500.$$

4. Dr.		BANK ACCOUNT		Cr.	
Particulars	₹	Particulars	₹		
To Balance b/d	40,000	By Creditors A/c	8,000		
To Sonu's Capital A/c	1,150	By Hari's Capital A/c	1,19,750		
To Zubin's Capital A/c	1,01,600	By Balance c/d	15,000		
	<u>1,42,750</u>		<u>1,42,750</u>		

Illustration 13.

Ansh, Vansh and Dev are in partnership sharing profits and losses in the ratio of 3 : 2 : 1.

BALANCE SHEET OF Ansh, Vansh AND Dev as at 31st March, 2019

Liabilities	₹	Assets	₹
Capital A/cs:		Machinery at cost	50,000
Ansh	80,000	Less: Provision for Depreciation	8,000
Vansh	60,000	Furniture	1,000
Dev	40,000	Sundry Debtors	80,000
Reserve	24,000	Less: Provision for Doubtful Debts	3,000
Workmen Compensation Reserve	6,000	Stock	50,000
Sundry Creditors	60,000	Cash at Bank	1,00,000
	<u>2,70,000</u>		<u>2,70,000</u>

On 30th June, 2019, Vansh retired and Ansh and Dev continued in partnership, sharing profits and losses in the ratio of 3 : 2. It was agreed that the following adjustments were to be made in the Balance Sheet as at 30th June, 2019:

- Machinery was to be revalued at ₹ 45,000.
- Stock was to be reduced by 2%.

- (iii) Furniture was to be reduced to ₹ 600.
 (iv) Provision for Doubtful Debts to be increased by ₹ 1,000.
 (v) A Provision of ₹ 300 was to be created for Outstanding Expenses.

The partnership agreement provided that on the retirement of a partner, goodwill was to be valued at ₹ 24,000 and Vansh's share of the same was to be adjusted into the accounts of Ansh and Dev. The profits up to the date of retirement from the date of last Balance Sheet was estimated at ₹ 45,000. All the partners are to be credited with their respective share of profit earned till the date of retirement of Vansh.

Vansh was to be paid in full. Ansh and Dev were to bring sufficient amount so as to make their capitals in proportion to the new profit-sharing ratio, subject to the condition that a cash balance of ₹ 30,000 was to be maintained as working capital. Before making this adjustment the cash balance was ₹ 68,000 on 30th June, 2019.

Pass necessary Journal entries to give effect to the above arrangements and prepare Partners' Capital Accounts as on 30th June, 2019.

Solution:

JOURNAL

Date	Particulars	LF.	Dr. (₹)	Cr. (₹)
2019 June 30	Ansh's Capital A/c ...Dr.		2,400	
	Dev's Capital A/c ...Dr.		5,600	
	To Vansh's Capital A/c			8,000
	(Being Vansh's share of goodwill adjusted in the Capital Accounts of Ansh and Dev in the gaining ratio of 3 : 7) (WN 1 and 2)			
	Revaluation A/c ...Dr.		2,700	
	To Stock A/c			1,000
	To Provision for Doubtful Debts A/c			1,000
	To Furniture A/c			400
	To Provision for Outstanding Expenses A/c			300
	(Being the decrease in assets and increase in liabilities)			
	Machinery A/c ...Dr.		3,000	
	To Revaluation A/c			3,000
	(Being the increase in the value of machinery)			
	Revaluation A/c ...Dr.		300	
	To Ansh's Capital A/c			150
	To Vansh's Capital A/c			100
	To Dev's Capital A/c			50
	(Being the gain (profit) on revaluation divided in the old ratio)			
	Reserve A/c ...Dr.		24,000	
	Workmen Compensation Reserve A/c ...Dr.		6,000	
	To Ansh's Capital A/c			15,000
	To Vansh's Capital A/c			10,000
	To Dev's Capital A/c			5,000
	(Being the transfer of free Reserves to the Partners' Capital Accounts in the old ratio)			
	Profit and Loss Suspense A/c ...Dr.		45,000	
	To Ansh's Capital A/c			22,500
	To Vansh's Capital A/c			15,000
	To Dev's Capital A/c			7,500
	(Being the estimated profit till the date of retirement transferred to the Capital Accounts in the old ratio)			
	Bank A/c ...Dr.		55,100	
	To Ansh's Capital A/c			15,130
	To Dev's Capital A/c			39,970
	(Being the cash brought in by Ansh and Dev as per agreement) (WN 3)			
	Vansh's Capital A/c ...Dr.		93,100	
	To Bank A/c			93,100
	(Being the payment made to Vansh on his retirement)			

Particulars	Ansh ₹	Vansh ₹	Dev ₹	Particulars	Ansh ₹	Vansh ₹	Dev ₹
To Vansh's Capital A/c (WN1) (Goodwill)	2,400	...	5,600	By Balance b/d	80,000	60,000	40,000
To Bank A/c (Balancing Figure)	...	93,100	...	By Ansh's Capital A/c (WN 1)	...	2,400	...
To Balance c/d (WN 3)	1,30,380	...	86,920	By Dev's Capital A/c (WN 1)	...	5,600	...
				By Revaluation A/c (Gain)	150	100	50
				By Reserve A/c	12,000	8,000	4,000
				By Workmen Compensation Reserve	3,000	2,000	1,000
				By Profit and Loss Suspense A/c	22,500	15,000	7,500
				By Bank A/c (Bal. Fig.)	15,130	...	39,970
	<u>1,32,780</u>	<u>93,100</u>	<u>92,520</u>		<u>1,32,780</u>	<u>93,100</u>	<u>92,520</u>

Working Notes:1. *Adjustment of Goodwill:*

Vansh's Share of Goodwill = ₹ 24,000 × 2/6 = ₹ 8,000, which is contributed by Ansh and Dev in their Gaining Ratio of 3 : 7.

Ansh's contribution = ₹ 8,000 × 3/10 = ₹ 2,400; Dev's contribution = ₹ 8,000 × 7/10 = ₹ 5,600.

2. *Computation of Gaining Ratio (Gain = New Share – Old Share):*

Ansh's Gain = 3/5 – 3/6 = 3/30; Dev's Gain = 2/5 – 1/6 = 7/30

Gaining Ratio = 3/30 : 7/30 or **3 : 7**.

3. *Cash to be brought in by Ansh and Dev:*

	₹
Amount payable to Vansh	93,100
<i>Add:</i> Amount to be retained as Working Capital	30,000
	1,23,100
<i>Less:</i> Cash already available	68,000
Cash to be brought in by Ansh and Dev	55,100

Adjusted Old Capital of Ansh = ₹ (80,000 + 150 + 12,000 + 3,000 + 22,500 – 2,400) = ₹ 1,15,250.

Adjusted Old Capital of Dev = ₹ (40,000 + 50 + 4,000 + 1,000 + 7,500 – 5,600) = ₹ 46,950.

Total Capital of the New Firm = ₹ 55,100 + ₹ 1,15,250 + ₹ 46,950 = ₹ 2,17,300.

Ansh's Capital in New Firm = ₹ 2,17,300 × 3/5 = ₹ 1,30,380;

Dev's Capital in New Firm = ₹ 2,17,300 × 2/5 = ₹ 86,920.

Unsolved Questions

3. P, Q and R were partners sharing profits and losses in the ratio of 4 : 3 : 3. The Balance Sheet of the firm as at 31st March, 2015 stood as follows:

Liabilities	₹	Assets	₹
Creditors	10,000	Cash and Bank	20,000
Capital A/cs: P	30,000	Debtors	15,000
Q	15,000	Stock	17,000
R	15,000	Fixed Assets	52,000
Employees' Provident Fund	20,000	Drawings: R	6,000
Reserves	10,000		
Workmen Compensation Reserve	10,000		
	<u>1,10,000</u>		<u>1,10,000</u>

R retired on the above date and following terms and conditions were agreed upon:

- Fixed Assets are to be depreciated by ₹ 2,000 and Provision for Doubtful Debts is to be created ₹ 1,000.
- A Liability of ₹ 4,000 for Workmen Compensation is to be created.
- Goodwill of the firm is valued at ₹ 50,000.
- New profit-sharing ratio of P and Q is 2 : 1.
- Final balance payable to R is to be treated as loan carrying interest @10% p.a.
- Final balance of R is to be settled in three equal annual instalments plus interest and the first instalment is payable on 31st March, 2016.

Pass Journal entries relating to R's retirement. Also, show Balance Sheet of P and Q as at 1st April, 2015 and R's Loan Account for 2015-16, 2016-17 and 2017-18.

4. Manoj, Naveen and Deepak were partners sharing profits in the ratio of 3 : 2 : 1. On 1st April, 2017, Naveen retired. On that date Balance Sheet was as follows:

Liabilities	₹	Assets	₹
General Reserve	6,000	Plant	30,000
Expenses Owing	2,000	Patents	3,000
Bills Payable	5,000	Debtors	9,500
Creditors	10,000	Stock	11,000
Capital A/cs: Manoj	12,000	Cash	500
Naveen	10,000		
Deepak	9,000		
	<u>31,000</u>		
	<u>54,000</u>		<u>54,000</u>

The terms were:

- Goodwill of the firm be valued at ₹ 12,000 and Naveen's share of goodwill be adjusted in the accounts of Manoj and Deepak who will share the future profits and losses in the ratio of 3 : 2.
- Expenses owing are to be brought down to ₹ 1,500; Plant is to be valued at 10% less and Patents at ₹ 4,000.
- The total capital of the new firm will be fixed at ₹ 25,000 to be contributed by partners in the profit-sharing ratio.

Prepare necessary Ledger Accounts to record the above and prepare Balance Sheet after Naveen's retirement.

5. Following is the Balance Sheet of A, B and C as at 31st March, 2018, who have agreed to share profits and losses in proportion of their capitals:

Liabilities	₹	Assets	₹
Sundry Creditors	2,00,000	Cash at Bank	4,10,000
Employees' Provident Fund	1,40,000	Closing Stock	4,00,000
Profit and Loss A/c	1,00,000	Sundry Debtors	4,40,000
General Reserve	80,000	Less: Provision for Doubtful Debts	40,000
Investment Fluctuation Reserve	60,000	Land and Building	8,00,000
Workmen Compensation Reserve	60,000	Machinery	12,00,000
Capital A/cs:		Investment (Market Value ₹ 2,70,000)	2,00,000
A	8,00,000	Advertisement Expenditure	30,000
B	12,00,000		
C	8,00,000		
	28,00,000		
	34,40,000		34,40,000

On 1st April, 2018, A retired from the firm and remaining partners decided to carry on the business. It was agreed to revalue the assets and reassess the liabilities on that date, on the following basis:

- Land and Building to be appreciated by 30%.
- Machinery be brought down by 30%.
- There were Bad Debts of ₹ 60,000.
- The claim on account of Workmen Compensation Reserve was determined at ₹ 32,000.
- Goodwill of the firm was valued at ₹ 5,60,000 and A's share of Goodwill was adjusted against the Capital Accounts of the continuing partners B and C who have decided to share future profits in the ratio of 3 : 4 respectively.
- Continuing partners decided to record the effect of reserves (after adjusting claim on account of Workmen Compensation Reserve) and accumulated profits/losses without effecting their book values.
- Capital of the new firm in total will be the same as before the retirement of A and will be in the new profit-sharing ratio of the continuing partners.
- Amount due to A be settled by paying ₹ 2,00,000 immediately and balance by transferring to her Loan Account which will be paid later.

Prepare Revaluation Account, Capital Accounts of Partners and Balance Sheet of the firm after Kusum's retirement.

6. The Balance Sheet A, B and C who were sharing profits in the ratio of 3 : 1 : 2 respectively stood as follows on 31st March, 2017:

Liabilities	₹	Assets	₹
Bills Payable	1,20,000	Cash	70,000
Sundry Creditors	1,80,000	Stock	2,20,000
General Reserve	1,80,000	Sundry Debtors	2,00,000
Capital A/cs:		Less: Provision for Doubtful Debts	10,000
A	3,00,000	Building	4,00,000
B	3,00,000	Machinery	3,00,000
C	2,80,000	Furniture	1,20,000
	8,80,000	Advertisement Suspense A/c	60,000
	13,60,000		13,60,000

On 1st April, 2017, C retires from the firm and the partners agree to the following terms:

- (i) Building and Stock are to be appreciated by 20% and 15% respectively.
- (ii) Machinery and Furniture are to be reduced by 10% and 7% respectively.
- (iii) Provision for Doubtful Debts to be increased to ₹ 15,000.
- (iv) A computer previously written off is sold for ₹ 5,000 plus CGST and SGST @ 9% each.
- (v) A provision of ₹ 5,000 be made in respect of outstanding legal charges.
- (vi) Goodwill of the firm is valued at ₹ 2,10,000.
- (vii) The continuing partners have decided to adjust their capitals in their New Profit-sharing Ratio after retirement of C. Surplus/deficit, if any, in their Capital Accounts will be adjusted through Current Accounts.

Prepare necessary Ledger Accounts and the Balance Sheet of the reconstituted firm.

7. Vijay, Kriti and Reeti are partners sharing profit and loss in the ratio of 2 : 2 : 1. Reeti retired on 30th June, 2019. Balance Sheet of the firm as at 31st March, 2019 stood as follows:

Liabilities	₹	Assets	₹
Capital A/cs:		Building	20,00,000
Vijay	12,00,000	Investments	2,50,000
Kriti	12,00,000	Stock	5,00,000
Reeti	8,00,000	Sundry Debtors	8,00,000
General Reserve	8,00,000	Cash in Hand	2,00,000
Sundry Creditors	2,00,000	Cash at Bank	4,50,000
	42,00,000		42,00,000

To determine the amount due to Reeti, it was mutually agreed that:

- (i) Building to be appreciated by ₹ 4,00,000.
- (ii) Investments to be valued at ₹ 2,00,000.
- (iii) Stock be taken at ₹ 6,00,000.
- (iv) Goodwill be valued at two years' purchase of the average profit of the past five years.
- (v) Reeti's share of profit up to the date of retirement be calculated on the basis of average profit of the preceding three years.

The profits of the preceding five years ending 31st March, were as under:

Year	2015	2016	2017	2018	2019
Profit (₹)	4,00,000	4,70,000	6,00,000	5,50,000	6,50,000

- (vi) Amount payable to Reeti to be transferred to her Loan Account carrying interest @ 8% p.a.
- Prepare Revaluation Account, Partners' Capital Accounts and Balance Sheet as at 30th June, 2019.

CLASS – 12
COMPUTER SCIENCE
POLYMORPHISM

- **Polymorphism** is an important concept of **object-oriented programming**.
- The word polymorphism means having **multiple forms**. The term Polymorphism gets derived from the Greek word where **poly means many and morphos means forms**.
- **Real life example of polymorphism:** A person (consider 'yourself') at the same time can have different characteristic. Like, you at the same time are a son/daughter, a brother/sister, a student. So the same person (which is 'you') possess different behaviour in different situations. This is called polymorphism.
- Polymorphism occurs when we have many classes that are related to each other by inheritance. We already know that, Inheritance lets us inherit attributes and methods from another class. Polymorphism **uses those methods to perform different tasks**. This allows us to perform a single action in different ways.

Types of Polymorphism :

In Java, Polymorphism can be divided into two types:

- 1. Compile-time Polymorphism**
- 2. Run-time Polymorphism**

1) Compile-time Polymorphism:

The compile-time polymorphism can be achieved through method overloading and operator overloading in Java.

a) Method Overloading :

In a Java class, we can create methods with the same name if they differ in parameters. When there are multiple functions with same name but different parameters then these functions are said to be **overloaded**.

Functions can be overloaded by **change in**

- Data type of actual parameters/arguments
- Number of parameters/arguments passed
- Sequence of data type of actual parameters

For example,

```
void test() { ... }
```

```
void test(int a) { ... }
```

```
float test(double a) { ... }
```

```
float test(int a, float b) { ... }
```

Example1: Program for Method Overloading in Java (By using different types of arguments)

```
class Exmp1 {
```

```
    // Method with 2 parameters
```

```
    static int Multiply(int m, int n)
```

```
    {
```

```
        return m * n;
```

```
    }
```

```
    // Method with the same name but 2 double parameters
```

```
    static double Multiply(double m, double n)
```

```
    {
```

```
        return m * n;
```

```
    }
```

```
}
```

```
class Prgm {
    public static void main(String[] args)
    {

        System.out.println(Exmp1.Multiply(3, 2));

        System.out.println(Exmp1.Multiply(8.5, 6.4));
    }
}
```

Output:

6

54.4

Example2: Program for Method Overloading in Java (By using different numbers of arguments)

```
class Testing {

    // Method with 2 parameters
    static int Multiply(int m, int n)
    {
        return m * n;
    }

    // Method with the same name but 3 parameters
    static int Multiply(int m, int n, int p)
    {
        return m * n * p;
    }
}
```

```
class Check {
    public static void main(String[] args)
    {
        System.out.println(Testing.Multiply(3, 2));

        System.out.println(Testing.Multiply(5, 8, 2));
    }
}
```

```
    }  
}
```

Output:

6

80

a) **Operator Overloading:**

Java also provide option to overload operators. For example, The + operator in Java is used to perform two specific functions. When it is used with numbers (integers / floating-point numbers), it performs addition. And when we use + operator with strings, it performs string concatenation.

Example3: Program for Operator overloading in java

```
class Op_overloading {  
  
    void func(String s1, String s2)  
    {  
        String s = s1 + s2;  
        System.out.println("After concatenation- "  
            + s);  
    }  
  
    void func(int m, int n)  
    {  
        int p = m + n;  
        System.out.println("Sum = " + p);  
    }  
}  
  
class Check {  
    public static void main(String[] args)  
    {  
        Op_overloading obj = new Op_overloading ();  
        obj.func(5, 5);  
    }  
}
```

```
    obj. func("ria", "das");  
  }  
}
```

Output:

Sum = 10

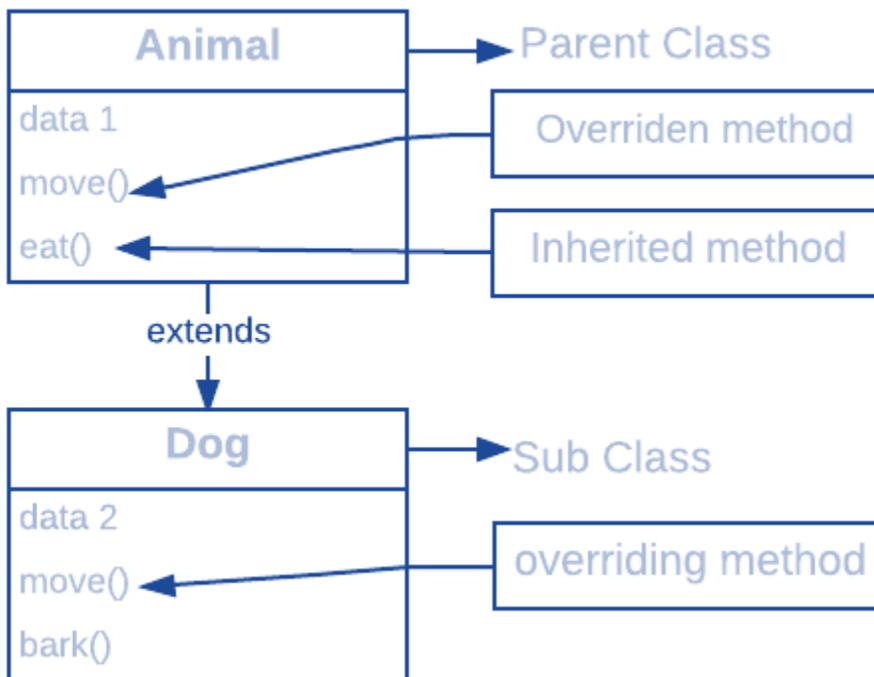
After concatenation - riadas

b) Runtime polymorphism:

In Java, run-time polymorphism can be achieved through method overriding.

a) Method overriding

In any object-oriented programming language, Overriding is a feature that allows a subclass or child class to provide a specific implementation of a method that is already provided by one of its super-classes or parent classes. When a method in a subclass has the same name, same parameters or signature and same return type as a method in its super-class, then the method in the subclass is said to override the method in the super-class.



The version of a method that is executed will be determined by the object that is used to invoke it. If an object of a parent class is used to invoke the method, then the version in the parent class will be executed, but if an object of the subclass is used to invoke the method, then the version in the child class will be executed. In other words, it is the type of the object being referred to, that determines which version of an overridden method will be executed.

Example4: Program for Method overriding in java

```
class Parent
{
    void Print()
    {
        System.out.println("let's talk about parent class");
    }
}
class subclass1 extends Parent {
    void Print()
    {
        System.out.println("better");
    }
}
class subclass2 extends Parent {
    void Print()
    {
```

```
        System.out.println("best");
    }
}
class Example4 {
    public static void main(String[] args)
    {
        Parent a;
        a = new subclass1();
        a.Print();
        a = new subclass2();
        a.Print();
    }
}
```

Output:

better

best

ASSIGNMENT – V

1. Define Polymorphism
2. Name two types of polymorphism in java
3. What is method overriding?
4. The compile-time polymorphism can be achieved through and in Java.
5. In Java, run-time polymorphism can be achieved through

बादल को घिरते देखा

Q) " दुर्गम बर्फानी घाटी में -.....अपने पर चिढ़ते देखा है, बादल को घिरते देखा है "

उपर्युक्त पद्यांश का ससन्दर्भ भाव स्पष्ट करें ।

उत्तर - उपर्युक्त पंक्तियाँ जनकवि नागार्जुन द्वारा रचित है ,जो कि हमारी पाठ्य पुस्तक ' काव्य मंजिरी ' में " बादल को घिरते देखा है " नामक शीर्षक से अवतरित है ।

इन पंक्तियों में कवि ने प्राकृतिक सौंदर्य के साथ साथ हिरणों की उन्मादकता का सजीव चित्रण किया है ।

कवि का भाव यह है कि हिमालय की दुर्गम बर्फ से ढकी हुई ,सैकड़ों हजारों फुट की ऊँचाई पर स्थित पहाड़ियों पर अपनी ही नाभि से उठने वाली मनमोहक तथा नशीली कस्तूरी की सुगंध जो हिरण को दिखाई नहीं देती ,उसकी खोज में दौड़ते भागते हुए और अपने आप पर चिढ़ते हुए दिखाई देते है ।कस्तूरी की सुगंध इतनी मोहक है कि उसको पाने के लिये हिरण व्याकुल होकर ढूँढते फिरता है ,परंतु ढूँढ नहीं पाता ।मुख्य भाव यह है कि सुंदर भावो को खोजने की आवश्यकता नहीं है बल्कि वह तो प्रत्येक मानव के अंदर समाहित है ।

कवि का कस्तूरी मृग की अज्ञानता को दर्शाते हुए यह कहना चाहते है कि आज मानव की स्थिति भी कुछ ऐसी ही है ।मनुष्य के पास बिद्या ,बुद्धि और बलरूपी कस्तूरी रहने पर भी वह इधर उधर भटकता हुआ ठोकरे खाता रहता है ।वह सुख की चाह में परेशान रहता है ,किन्तु उसे वास्तविक सुख की प्राप्ति नहीं हो पाती ।

आज मनुष्य की दयनीय दशा का कारण यही है कि उसमें हिरण की कस्तूरी की तरह अपनी शक्ति व सामर्थ्य का ज्ञान नहीं है ,यही कारण है कि जीवन की सफलता रूपी चाबी मनुष्य के पास रहती है,किन्तु वह उसे समझ नहीं पता है और जीवनपर्यन्त भटकता हुआ परेशान रहता है ।यदि उसे उसका ज्ञान हो जाय तो वह किसी भी स्थिति में रहकर सुख की अनुभूति कर सकता है

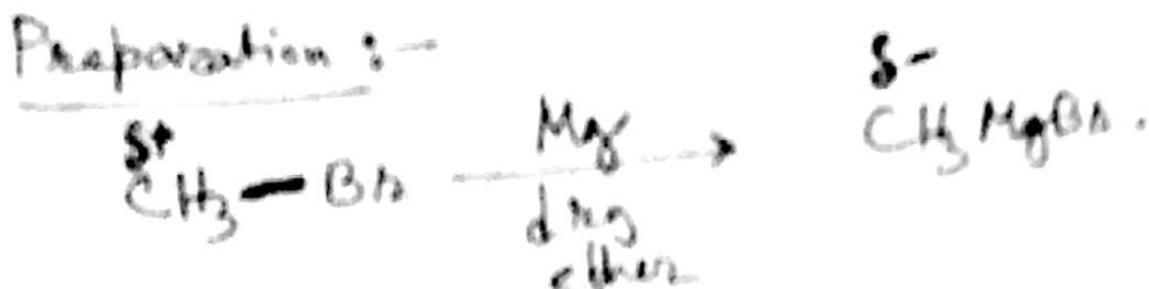
अतः कवि भावो की अधिकता को अभिव्यक्त करने में स्वयं को असमर्थ अनुभव करते है ।यही कारण है कि वह स्वयं पर चिढ़ रहे है । कस्तूरी मृग को प्रतीक बनाकर कवि के भावों की व्यंजना मर्मस्पर्शी सिद्ध होती है

Home work

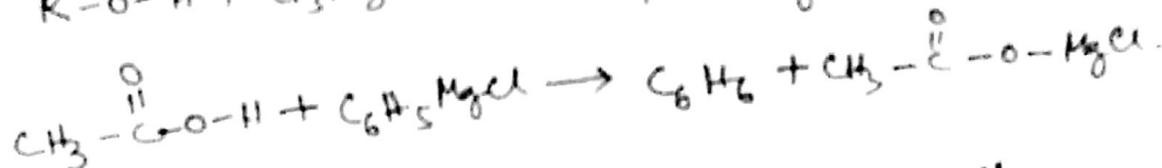
कविता का केन्द्रीय भाव स्पष्ट करते हुए कवि का उद्देश्य लिखे।

CHEMISTRY - XIIHaloalkanes-Haloarenes**Organo-metallic Compounds (Grignard Reagents)**

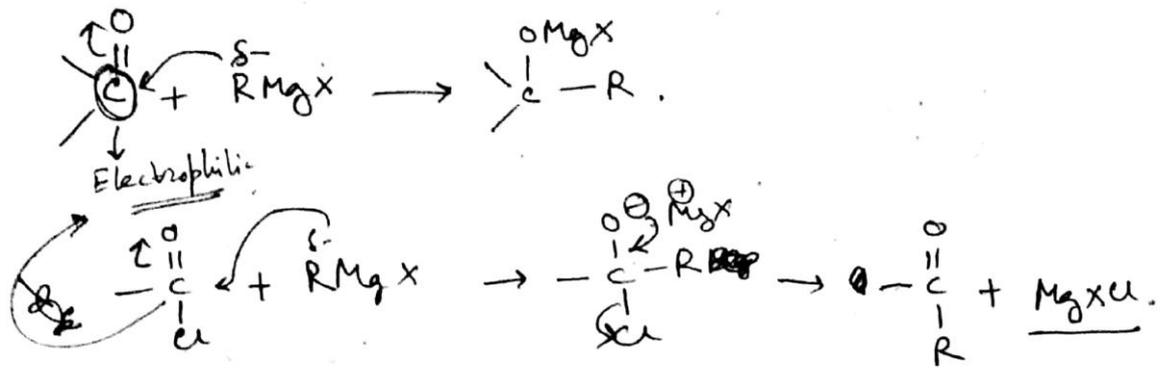
CH_3MgBr , CH_3MgI , PhMgBr etc. are known as Grignard reagents.



Here UMPOLUNG is observed.

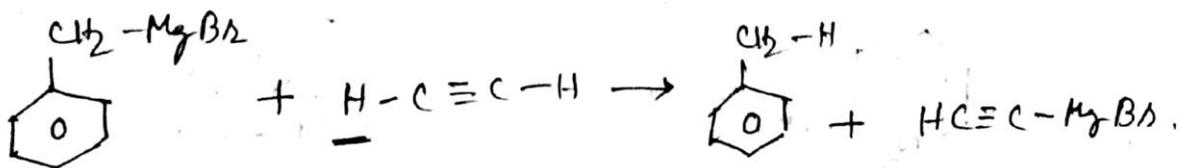
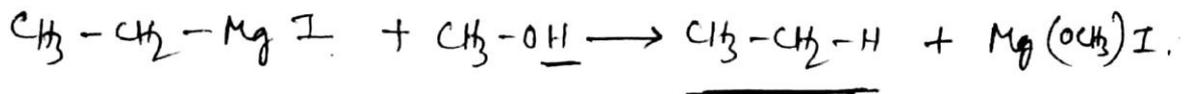
Mode of Reaction :-1. With active Hs :-

2. With electrophilic C atoms :-

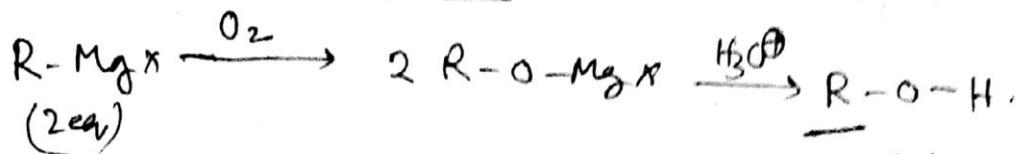


Use of Gr.R. for preparative purposes :-

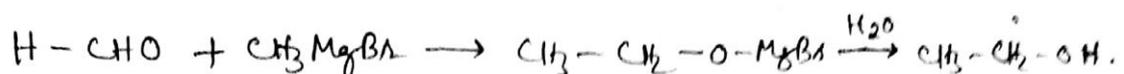
1. Preparation of hydrocarbon :-



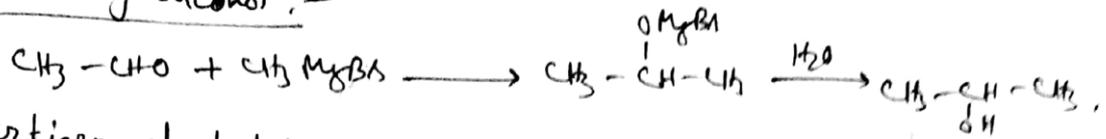
2. Preparation of alcohol :-



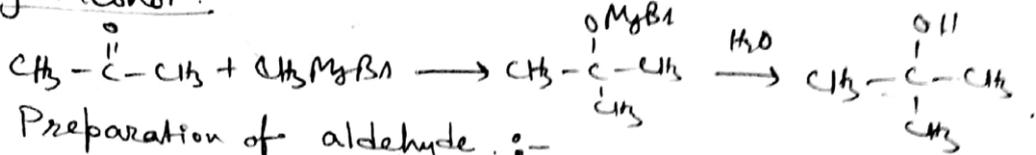
Primary alcohol :-



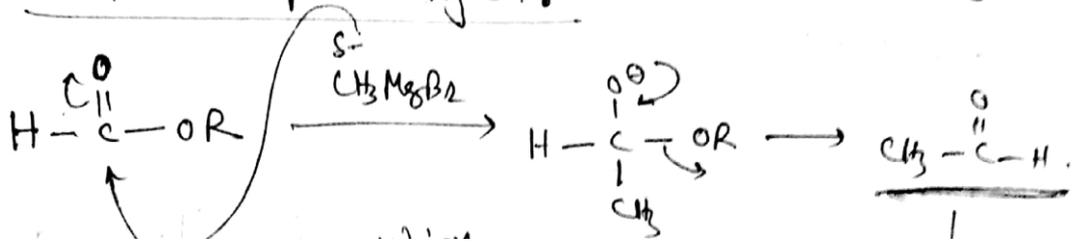
Secondary alcohol :-



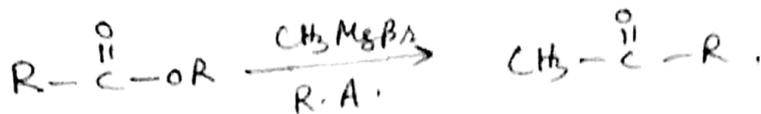
Tertiary alcohol :-



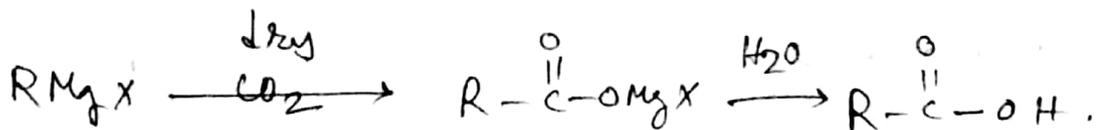
3. Preparation of aldehyde :-



4. Preparation of ketone :-



5. Preparation of carboxylic acid :-



Assignment - 14

Maths class - 12

Differentiation (2nd order)

If $y = f(x)$ then $\frac{dy}{dx} = f'(x)$ [1st order]

and $\frac{d^2y}{dx^2} = f''(x)$ [2nd order]

Ex 1 If $y = e^{2x} \sin 3x$ then find $\frac{d^2y}{dx^2}$.

$$\text{Now } \frac{dy}{dx} = 2e^{2x} \sin 3x + 3e^{2x} \cos 3x$$

Again differentiating both sides.

$$\frac{d^2y}{dx^2} = 4e^{2x} \sin 3x + 2e^{2x} \cos 3x \cdot 3 + 3 \cdot 2e^{2x} \cos 3x + 3e^{2x} (-\sin 3x) \cdot 3$$

$$= 4e^{2x} \sin 3x + 6e^{2x} \cos 3x + 6e^{2x} \cos 3x - 9e^{2x} \sin 3x$$

$$= 12e^{2x} \cos 3x - 5e^{2x} \sin 3x$$

$$= e^{2x} (12 \cos 3x - 5 \sin 3x)$$

Ex 2 If $x = 2 \cos \theta - \cos 2\theta$ and $y = 2 \sin \theta - \sin 2\theta$.

then find $\frac{d^2y}{dx^2}$ at point $\theta = \frac{\pi}{2}$.

$$\text{Now } \frac{dx}{d\theta} = -2 \sin \theta + 2 \sin 2\theta$$

$$\frac{dy}{d\theta} = 2 \cos \theta - 2 \cos 2\theta$$

$$\frac{dy}{dx} = \frac{dy}{d\theta} \cdot \frac{d\theta}{dx} = \frac{2(\cos \theta - \cos 2\theta)}{2(-\sin \theta + \sin 2\theta)}$$

$$\text{Now } \frac{d^2y}{dx^2} = \frac{d}{dx} \left(\frac{dy}{dx} \right) = \frac{d}{d\theta} \left(\frac{dy}{dx} \right) \cdot \frac{d\theta}{dx}$$

$$= \frac{d}{d\theta} \left(\frac{\cos\theta - \cos 2\theta}{-\sin\theta + \sin 2\theta} \right) \cdot \frac{d\theta}{dx}$$

$$= \frac{(\sin 2\theta - \sin\theta) \frac{d}{d\theta} (\cos\theta - \cos 2\theta) - (\cos\theta - \cos 2\theta) \frac{d}{d\theta} (\sin 2\theta - \sin\theta)}{(\sin 2\theta - \sin\theta)^2}$$

$$= \frac{(\sin 2\theta - \sin\theta)(-\sin\theta + 2\sin 2\theta) - (\cos\theta - \cos 2\theta)(2\cos 2\theta - \cos\theta)}{(\sin 2\theta - \sin\theta)^2}$$

$$= \frac{-\sin\theta \cdot \sin 2\theta + \sin^4\theta + 2\sin^2 2\theta - 2\sin 2\theta \sin\theta - (2\cos 2\theta \cos\theta - \cos^2\theta)}{(\sin 2\theta - \sin\theta)^2}$$

$$= \frac{(-3\sin\theta \sin 2\theta + 1 + 2 - 3\cos\theta \cdot \cos 2\theta) \frac{d\theta}{dx}}{(\sin 2\theta - \sin\theta)^2}$$

$$= \frac{3(1 - \sin\theta \sin 2\theta - \cos\theta \cdot \cos 2\theta) \frac{d\theta}{dx}}{(\sin 2\theta - \sin\theta)^2}$$

$$= \frac{3(1 - \sin\theta \sin 2\theta - \cos\theta \cos 2\theta)}{(\sin 2\theta - \sin\theta)^2} \cdot \frac{1}{2(\sin 2\theta - \sin\theta)}$$

$$= \frac{3}{2} \frac{(1 - \cos(2\theta - \theta))}{(\sin 2\theta - \sin\theta)^3} = \frac{3}{2} \frac{(1 - \cos\theta)}{(\sin 2\theta - \sin\theta)^3}$$

$$\left(\frac{d^2y}{dx^2} \right)_{\theta = \frac{\pi}{2}} = \frac{3}{2} \frac{(1 - \cos \frac{\pi}{2})}{\left(\sin 2 \cdot \frac{\pi}{2} - \sin \frac{\pi}{2} \right)^3}$$

$$= \frac{3}{2} \cdot \frac{1}{(-1)^3} = -\frac{3}{2}.$$

Ex 3
If $y = a \cos(\log x) + b \sin(\log x)$ [a, b constant]

then prove that

$$x^2 \frac{d^2 y}{dx^2} + x \frac{dy}{dx} + y = 0.$$

Now

$$\frac{dy}{dx} = -\frac{a \sin(\log x)}{x} + \frac{b \cos(\log x)}{x}$$

Now

$$\frac{d^2 y}{dx^2} = \frac{x \left(-\frac{a \cos(\log x)}{x} + a \sin(\log x) \right)}{x^2} + \frac{x \left(-\frac{b \sin(\log x)}{x} - b \cos(\log x) \right)}{x^2}$$

$$\frac{d^2 y}{dx^2} = \frac{1}{x^2} \left[-a \cos(\log x) + a \sin(\log x) - b \sin(\log x) - b \cos(\log x) \right]$$

L.H.S

$$\frac{x^2}{x^2} \left[-a \cos(\log x) + a \sin(\log x) - b \sin(\log x) - b \cos(\log x) \right]$$

$$+ \frac{x}{x} \left[-a \sin(\log x) + b \cos(\log x) \right]$$

$$+ a \cos(\log x) + b \sin(\log x)$$

$$= -a \cos(\log x) + a \sin(\log x) - b \sin(\log x)$$

$$- b \cos(\log x) - a \sin(\log x) + b \cos(\log x)$$

$$+ a \cos(\log x) + b \sin(\log x) = 0 \text{ R.H.S}$$

H.W

① Find $\frac{d^2y}{dx^2}$ if $y = a \cos \theta$, $x = b \sin \theta$

② If $x = A \cos nt + B \sin nt$ (A, B, n are constant)

Then prove that

$$\frac{d^2x}{dt^2} + n^2x = 0.$$

③ $y = e^x(\log x)$ prove that

$$xy_2 - (2x-1)y_1 + (x-1)y = 0$$

$$\text{where } y_2 = \frac{d^2y}{dx^2}, \quad y_1 = \frac{dy}{dx}.$$

④ If $y = 3e^{2x} + 2e^{3x}$ then prove that

$$y_2 - 5y_1 + 6y = 0 \quad \text{where } y_2 = \frac{d^2y}{dx^2}$$

$$y_1 = \frac{dy}{dx}.$$

⑤ If $y = \left[\log(x + \sqrt{x^2+1}) \right]^2$ then

$$\text{prove that } (1+x^2) \frac{d^2y}{dx^2} + x \frac{dy}{dx} = 2.$$



DREAMLAND SCHOOL
CLASS XII
ASSIGNMENT 10
ENGLISH LANGUAGE

DATE- 8-05-2020

Q1. Complete the sentences according to the instructions given:

1. Unless you work hard you will not succeed in the competition.
(Begin- If.....)
2. My mother is an introvert, that's why she does not enjoy parties.
(Begin- As my mother.....)
3. Hardly had he entered the hall when the music started.
(Begin- No sooner.....)
4. If you want to be a good dancer you have to practise rigorously for at least seven hours a day.
(Begin- You have.....)
5. If you cannot face the Principal, Parul will have to.
(Begin- Either.....)
6. We have learned so much but the world is still veiled in mystery.
(Begin- Though.....)
7. But for the NGO's support, the woman would have died.
(Begin- Had.....)
8. There are a lot of people who depend on him.
(Begin - He has.....)
9. In spite of all their efforts, the patient could not be saved.
(Begin- Despite.....)
10. Mary writes beautiful poems.
(Begin- Beautiful poems.....)
11. He was so poor that he could not pay the college fees.
(Begin- He.....)
12. A strange noise was coming from the end of the street. I ran away.
(Begin- Hearing.....)
13. Ram is lazy, yet he completes his work in time.
(Begin- In spite.....)
14. Can one survive in this situation?
(Begin- One.....)
15. The dog was angry but it didn't bite.
(Begin- Though.....)

Q2. Write a report in approximately 300 words titled :

World- Shaking Scientific Discovery by Indian Scientist

Use the following the points -

*Description of discovery - date, time, place of discovery - circumstances leading to the discovery
- biographical information about the scientist - reaction of the scientific community, authority
and people of the nation--comments of eminent scientists--praise and rewards for the scientist.*
