

V.V.SANGHA'S
VEERASHAIVA COLLEGE

Cantonment, Ballari- 583104, Karnataka.

www.veerashaivacollege.org



Criteria-II: TEACHING LEARNING PROCESS

2.5.1: Mechanism of internal/ external assessment is transparent and grievance redressal system is time- bound and efficient (Q.M)

Copy Enclosed

- Students Assignments

VEERASHAIVA DEGREE
COLLEGE BELLARY.



NAME :- K. Karibasava

COURSE :- B.A. IV¹⁵ SEMESTER.

SUBJECT :- ECONOMIC.

REG. NO :- A1911552.

Praveen
PRINCIPAL
VEERASHAIVA COLLEGE,
BALLARI

Quality
COORDINATOR,
Internal Quality Assurance Cell (IQAC)
VEERASHAIVA COLLEGE,
BELLARY-KARNATAKA.

*.) ಅಂತರಾಷ್ಟ್ರೀಯ ವ್ಯಾಪಾರದ ಮೂಲತ್ವ ಓ
ಪ್ರಯೋಜನಗಳು



३०५

ಅಂತರಾಷ್ಟ್ರೀಯ ವ್ಯಾಪಾರವು ಇಹ ಪ್ರಶ್ನಂಚದ
 ಅಧಿಕ ಪ್ರಗತಿಯನ್ನು ಕಾಣಬೇಕೆ ಒಂದು ಶಾಖೆಯನಿನ್ನ
 ವ್ಯಾಪಾರದಲ್ಲಿ ತೊಡಗಿರುವ ಇಲ್ಲಿ ಈ ಗ್ರಹಗು, ಭೂಮಿನ್ನರಾಗಿ
 ನಾವಿಂದ ಸಾಧ್ಯಾರ್ಥಕವಾಗಬಹುದ್ದು. ಈನೇ ಅಧಿಕರಣ ಕಾರ್ಯ
 ರಾಜೀವ್ಯವಹಾರ ಇತ್ತೀರು ಬಳಾಳ್ಯವಾಗಬ್ಬಿರು ಅದು, ವ್ಯಾಪಾರಾತ್ಮಕ
 ಚರ್ಚೆ ಈ ಗ್ರಹಗು ಅವಲಂಬಿಸಬಹುದ್ದು. ಅಂತರಾಷ್ಟ್ರೀಯ
 ವ್ಯಾಪಾರವು ಅನೇಕ ಪ್ರಮೇಯಗ್ರಹಗು ಲಂಬಿ ಮಾಡುತ್ತದೆ.
 ಅವುಗಳಲ್ಲಿ ಏನುವುದು ಎಂಬುದು ಇಂದಿನ
 ಅಧಿಕರಣ ವ್ಯಾಪಾರದಲ್ಲಿ ಇಂತಹಿನ್ನು ಇಂತಹಿನ್ನು.

* ಅಂತರ್ವೈಷಣಿ ಬ್ಯಾಟ್‌ಮೆಂಟ್ ಮಾಡಲ್ಪ್ರ ⑩ ಪ್ರೀರ್ವೇಚನ್‌ಗ್ರಹ -

- (@) ಸಂಪರ್ಕಸ್ವಲಗ್ಜ ಸಂಹಿತೆ ಬ್ರಹ್ಮ
 - (ಇ) ಕೋರ್ಟೆಂಬ ವಸ್ತುಗಳ ಅವಾದ್ಯ
 - (C) ಕ್ರೊನಾಂಡೆರ್ಗ
 - (D) ಡ್ರಾಫ್ಟ್‌ಗೆ ಪ್ರೈರೆಂ
 - (E) ಮಾರುಕೆಚ್ಚೆಂಬ ಎತ್ತರ
 - (F) ನಕೆಸ್ತುವ್ಯಾಪ್ತಿ ಅಖಂಡ
 - (G) ಅತ್ಯಾದ ಹೆಂಸ್ಥಿತಿಂಬೆಹ್ಲು
 - (H) ಚೆಲೆನ್ಜು ಶಿಫ್ಟೆತೆ
 - (I) ಲದ್ಯಿತ ಯಂತ್ರವಾಧಿ ಚೆಲನೆ
 - (J) ಉತ್ಪಾದನೆ ತುಶ್ಲತೆಂಬ ಉತ್ಪಾದನೆ.



④ ನಂತರೆನ್ನುಲಗ್ಗಿ ಖಂತ್ರಾಣ ಬ್ರಹ್ಮ

ಅಂತರಾಣಿಯು ವ್ಯಾಪಾರವು ಅಂತರಾಣಿ.

ಮಾಡುವುದ್ದಲ್ಲಿ ಶ್ರದ್ಧೆ ಮಧ್ಯಾನೆಂಬು ತೆತ್ತಿನೆನ್ನು ಮತ್ತು ಹೊಸಕ್ಕಿರುತ್ತಿನ್ನು ಅಷ್ಟವಿಷಯ ಅವರಾಗ ಹಿಂತಿಕೊಳ್ಳಲ್ಪಡೆ. ಗಡಿಂದ ಬಹುದೆನೆಂಬು ಮತ್ತು ಶಿಫಿರ್ಮಿಂಗ್‌ನಾಗುತ್ತದೆ. ಮತ್ತು ವೆಸ್ಟ್‌ಜಿಎ ಬಹುದೆನೆಂಬು ಅಧಿಕೆನಾಗುತ್ತದೆ. ಈಗ ಪ್ರತಿಂಭಿಂದು ದೇಶದ್ದೇ ತೆಸ್ವಿಲ್‌ನ ನಂತರೆನ್ನುಲಗ್ಗಿನ್ನು ಸಂಪ್ರಾರ್ಥಿಯಾಗಿ ಬ್ರಹ್ಮಸಿಕ್ಷೆಗೆಲು ಕಾಂತಿಯಾಗುತ್ತದೆ.

⑤ ಕೊರತೆಯ ವೆಸ್ಟ್‌ಜಿಎ ಅಷ್ಟಿದ್ದು :-

ಧಂಡಿನ್ನುಲಗ್ಗಿ ಲಭ್ಯತೆಂಬು ರಾಷ್ಟ್ರಗ್ಗಿ ವಿಭಾಗಿಕೆ ಅಷ್ಟಮಾನತೆಂಬುರುವುದು ಉದ್ದೇಶಿಸಿದ್ದು ಅನಿಗೆ ಅನ್ತಿಮಾನವ ವಿಲ್ಲಾವೆತ್ತಿಹಿಗಿನ್ನು ಬಹುಧಾಳು ಎಂಬುವುದು ಮಾನವ ರಾಷ್ಟ್ರಕ್ಕೆ ಕಾಂತಿಯಾಗುವುದ್ದು. ಮಾನವ ಬಂಡುಕೆನ್ನಿ, ಸೀರೆಂಡೆನ್ ಕೊನ್‌ಎ ಶಿಫಿರ್ಮಿಂಂಗ್ ಅಭಿಪ್ರಾಯಗಾಗಿ ಯಾಧಿ ಅರ್ಥಂತ್ರಾ ಬೃಹತ್ ಪ್ರಮಾಣದ ವರ್ತೆಗ್ಗೆ ಅಷ್ಟಿತ್ತೆ ನಾರುತ್ತದೆ. ಅಂತರಾಣಿಯು ವ್ಯಾಪಾರವು ಯಾಧಿ ವರ್ತೆಗ್ಗೆ ನಿಡುವೆ ಅಧಿಕ ಸಂಬಂಧವನ್ನು ಕೆಲ್ಲಾಸುವುದಿಂದ, ಎಂಬುವುದೇ ರಾಷ್ಟ್ರವು ತಿನಿಗೆ ಅನ್ತಿಮಾರ್ಪಣವಿಕ್ಕು ಪ್ರಮಾಣವಿಲ್ಲ ಬಹುಧಾಳದ ವರ್ತೆಗ್ಗೆನ್ನು ಅವರಾಗ ದೊರೆಕಿಂತಿಗೆನ್ನಲ್ಪಡೆ.

⑥ ಕ್ರಾನಿಕೆರ್ಲಿನ್:

ಒಬ್ಬಾರ್ಥಿತ್ವ ಚಾರ್ಚೆಂಡರ್‌ಲ್ಯು ಯಾರ್ಡ್‌ನ ವ್ಯಾಪಾರದ ಅವಕ್ಷೇತ್ರ ಮತ್ತು ಕ್ರಾನಿಕುಲರ್ ಬ್ರಾಂಕ್‌ಫ್ಲೈದ್. ಅಧಿಕಾರಿಬ್ರಾಂಕ್ ಕಾಂತಿನೆಯ ಕ್ರಾನಿಕುಲರ್ ಬ್ರಾಂಕ್‌ರೆಂಡ್‌ಲ್ಯು ಅನ್ತಿಮಾನವ ಎಂಬುತ್ತೇನ್ನು. ಅಂತಹ ವರ್ತೆನ್ನು ಮಾತ್ರ ಮಾತ್ರ ವರ್ತೆ ವರ್ತೆಗ್ಗೆನ್ನು ಅಭಿಪ್ರಾಯಕ್ಕಾಗಿ ಯಾರ್ಡ್‌ನ ಅವಕ್ಷೇತ್ರ ಬ್ರಾಂಕ್‌ರೆಂಡ್‌ಲ್ಯು ಮಾತ್ರ ಮಾತ್ರ ವರ್ತೆಗ್ಗೆನ್ನಲ್ಪಡೆ. ನಂತಹ ವರ್ತೆನ್ನು ಮಾತ್ರ ಮಾತ್ರ ವರ್ತೆ ವರ್ತೆಗ್ಗೆ ಅಂತ ಕಾಲ್ಪಿಸುವುದು ಕಾಂತಿಗಾಗಿ ಪ್ರಾರ್ಥಿತ್ವ ಮಾಡಿ ಕ್ರಾನಿಕುಲರ್ ಕಾಲ್ಪಿತ್ವ ಅಂತ ಕಾಲ್ಪಿಸುವುದು ಕಾಂತಿಗಾಗಿ ಪ್ರಾರ್ಥಿತ್ವ ಮಾಡಿ.



VEERASHAIVA DEGREE

COLLEGE

HINDI ASSIGNMENT
02

Submitted to :-

SHOBHA SINGH MAM

Submitted by :-

SINGH SNEHASAGIAR RAGHUVeer

BSc - IInd Semester.

Computer Science | Mathematics.

Register Number :-

U16VB21S0128.

दिल्ली में एक मौतः कमलेश्वर की



मैं चुपचाप खड़ा सब देख रहा हूँ और अब क्यों मुझे मन में लगा रहा है कि दीवानांद की शवयात्रा में कम से कम मुझे तो शामिल हो ही जाना चाहिए था। उनके लड़के से मेरी खासी जान-पहचान है और ऐसे मौके पर तो दुश्मन का साथ भी दिया जाता है। सर्वी की बजाए से मेरी हिमात छूट रही है.... पर मन में कही शवयात्रा में शामिल होने की बात भीतर ही भीतर कोच रही है।

पारीं तरफ कुहरा ध्वाया दुआ है। घर के सुबह के जौं छजे हैं; लेकिन पूरी दिल्ली छुंघ में लिपटी हुई है। सड़के नम हैं। पेड़ भीरे हुए हैं, कुछ भी साफ दिखाई नहीं देता। जिंदगी की हलचल का पता आवाजों से लगा रहा है। ये आवाजें कानों में छस गई हैं। घर के दर दिस्से में आवाजे आ रही हैं। वासवानी के जौंकर ने रोज़ की तरह स्टोव जला दिया है, उसकी सनसनाइट दीवार के पार से आ रही है। बगल ताल कमरे में अतुल मवानी जूते पर पालिश कर रहा है....

ऊपर सरदारजी मूँछों पर फिकरों लगा रहे हैं... उनकी शिरुड़ी के परदे के पार जलता हुआ बाब छड़े मोती की तरह चमक रहा है। सब दरवाजे बंद हैं, सब शिरुड़ियों पर परदे हैं, लेकिन दर दिस्से में जिंदगी की खोल है, तिमानिले पर वासवानी ने बाथरूम का दरवाजा बंद किया है और पाइप खोल दिया है....

कुदरे में बसें दौड़ रही हैं.... जू-जू करते भाशी टायरों की आवाजे दूर से जंजीरों आती हैं और किर दूर आती जाती है.... मोटर-रिकशे हेतदाश। भारी चले जा रहे हैं। ऐवसी का बीतर अभी किसी ने डाउन किया है, पड़ोस के डॉक्टर के यहाँ फीन की धंठी छज रही है। और पिछताड़े गली से गुजरती हुई कुछ लड़ियों सुबह की शिपट पर जा रही है।

सरस्त सर्वी है। सड़के छिठुरी हुई है और कोदरे के बादलों की चीरती हुई कारें और बसे होने बजाती हुई

मारा रही है, सड़कों और पटरियों पर भीड़ है जो लिपटा हुआ हर आदर्शी भरकते हुई रुद के लगा रहा है।



वे अनें चुपचाप धृष्टि के समुद्र में बढ़ती जा रही है... वहसों में भीड़ है लोग ठंडी सौंठ पर सिकड़ी हुए छैठे हैं और कुछ लोग बीच में ही इसा की तरह सलील पर लटके हुए हैं बाहे परसारे, उनकी दृश्येयियों में कीलें नहीं, लस की छक्कीली, घमकदार छड़े हैं। और ऐसे में दूर से एक अर्थी सड़क पर चली आ रही है। इसी अर्थी की खबर अखबार में है, मैंने अभी-अभी पढ़ी है। इसी मौत की खबर हीरी अखबार में छपा है आज रात करीलबाग में मशहूर और लोकप्रिय विजेन्स रैगनोट सेठ दीवानगंद की मौत इविन अख-पताल में ही गई उनका शव कोठी पर ले आया गया है। कल सुबह नो बजे उनकी अर्थी आर्य समाज रोड से दौती हुई पंचकुइया शमशान - भूमि में दाढ़ - संस्कार के लिए जाएगी।

और इन वक्त सड़क पर आती हुई यह अर्थी उद्दीपन की दीरी कुछ लोग दैपियां लगाए और भफलू बांधी हुए खामोशी से पीछे-पीछे आ रहे हैं। उनकी चाल बहुत धीमी है। कुछ दिखाई पड़ रहा है, कुछ नहीं दिखाई पड़ रहा है, पर मुझे देखा लगता है अर्थी के पीछे कुछ आदमी हैं। मीरे दरवाजे पर दर-तक होती है। मैं अखबार एक तरफ रखकर दरवाजा खोलता हूँ।

अतुल मतानी सामने खड़ा है। यार क्या मुझीखत है, आज की आयर्जन करने वाला भी नहीं आया, जरा अपना आयर्जन देना : अतुल कहता है तो मुझे तसली होती है। नहीं तो उसका चेहरा देखते ही मुझे खटका हुआ था। कि कही शव यात्रा में जाने वाला बताल न खड़ा करदे मैं उसे जौरन आयर्जन दे देता हूँ औं निक्षित हो जाता हूँ कि अतुल अब अपनी पैंठ पर लौटा करोगा और दूतावासों की चरकर काटने के लिए निकल जाएगा।

जब री गैरे अखबार में सेठ दीवानगंद की गोत की

खुबर पढ़ी थी, मुझे हर छण यदी खटका लगा कि बादी
कोई आकर इस सर्वी हर छण के साथ जाने न कह दे बिलिंग के सभी लोग उनसे परिवर्त आर
सभी शरीज दुनियादार आदर्शी थे।

तंशी सरदार्जी का नौकर जीने से भड़काता हुआ आया
और दरवाजा खोलकर बाहर जाने लगा अपने मन की ओर
सदारा देने के लिए मैंने उसे पुकारा, धर्म ! कहा जारहा
है ? सरदार्जी के लिए लपककर मैंने भी अपनी सिरारेट
मंवावाने के लिए उसे पेसे थमा दिए।

सरदार्जी नाश्ते के लिए मावहन मंवाता रहे हैं। इसका
मतलब है कि भी शतयात्रा में शामिल नहीं रहे हैं। मुझे
कुछ और राहत मिली. अब अतुल मवानी और सरदार्जी
का इरादा शतयात्रा में जाने का नहीं है तो मेरा कोई
सवाल ही नहीं उठता इस दोनों का या तासवानी
परिवार का ही सेठ दीवान चंद के यहाँ उचावा आना
जाना चाहा गया तो चार-पाँच बार की गुलाकात भर भी
अगर ये लोग ही शामिल नहीं हो रहे हैं तो मेरा
सवाल ही नहीं उठता।

सामने लाजरे पर मुझे मिसेस तासवानी दिखाई पड़ती है।
उनके खूबसूरत चेहरे पर अजीब-सी सफेदी और होठों पर
पिछली शाम की लिपिटिक की ढाकी लाली अभी भी
मौजूद थी. गाऊन पहने हुए ही ते निकली है। और अपना
जूँड़ा लांघा रही है। उनकी आवाज रुकाई पड़ती है,
डालिंग, जरा मुझे पैस्ट देना, प्लीज.. गुझे और राहत
मिलती है, इसका मतलब है कि मिस्टर त्रासनती भी
मैखत में शामिल नहीं हो रहे हैं, दूर आश समाज
रोड पर वह अर्थी छहत आदिता - अदिता बढ़ती
आ रही है।

अतुल मवानी मुझे आयरन लौटाने आता है। मैं आयरन
लेकर दरवाजा बंद कर लेना चाहता हूँ, पर वह भीतर
आकर रुका हो जाता है और कहता है। तुमने सुना,
दीवानचंदजी की कल मौत हो गई है।

मैंने अपनी अखबार में पढ़ा है, मैं सीढ़ा-जल जल
देता हूँ। ताकि मौत की बात आगे न लौटे अतुल गवाह
के चेहरे पर सफेदी झलक रही है, तद शेष के लिए
है, वह आगे कहता है लौटे भले आदमी थे दीवानांचद
यह सुनवार मुझे लगता है कि अग्रार बात आगे बढ़
गई तो अश्वी शतयात्रा में शमिल होने की नैतिक
जिरगोदारी ही जाएगी, इसलिए मैं कहता हूँ तूष्टारे ३२
का क्या हुआ?

हाँ, मरीज अपने घर की दृश्य है. आते ही अपना
कर्मीशन तो खड़ा हो जाएगा। यह कर्मीशन का काम भी
खड़ा बेहूदा है पर किया क्या जाए? आठ-दस
मासीनों मेरे नु निकल गई तो अपना बिजनेस शुरू
कर दूँगा। अतुल गवाही कह रहा है गई, शुरू करने में
जब मैं यहाँ आया था तो दीवानांदजी ने लड़ी सुदूर
की थी मेरी. उन्हीं की तजह से कुछ काम मिल
गया था. लौका बहुत मानते हैं उन्हें, पिर दीवानांद का
नाम सुनते ही गैर कान खड़े हो जाते हैं। तभी रिहड़की
से सरदार्जी सिर निकालकर पूछने लगते हैं, मिर-८२
मतानी कितने लाजे चलना है। वक्त तो नौ लाजे का था,
शायद शदी जैर मुझे लगता है कि यह लात शतयात्रा के
बारे में ही है सरदार्जी का नौकर धर्मा मुझे सिर्फ़ैर० टेकर
जा चुका है, और अपर मैं पर चाय लगा रहा है। तभी
मिसेज सासवानी की आवाज सुनाई पड़ती है मेरे खुयाल
से प्रतिला तो चाहिए.. तुम जरा ज़मी तैयार हो जाओ,
कहते हुए मिर-८२ तासवानी लगार से गुजाए गए हैं।
अतुल मुझके पूछ रहा है, शाम की कॉफी-दाउस की तरफ
आना होवा? शायद चल आँऊ, कहते हुए मैं करबला
लपेट लेता हूँ और तद वापस अपने कमरे में चला जाता
है। आधी मिनट बाद ही उसकी आवाज पिर आती है।
भई बिजली आ रही है। मैं जवाहर के देता हूँ, आ
रही है, मैं जानता हूँ कि तद इलेक्ट्रिक रोड से पानी
गर्म कर रहा है, इसीलिए उसने यह पुछा है।

पॉलिशा! बूट पॉलिश ताला लड़का का रेज की लरदृ अवधि से
 आवज लगता है और सरदारजी उसे अपर पुकार लेते हैं,
 लड़का बादर है ठक्कर पॉलिश करने लगता है और वह अपने
 नौकर को दिलायते हैं रहे हैं, खुबा ठीक एक छोड़े लेकर
 आना पापड़ मूनकर लाना और न उनके मन की चीजे लेता।
 मैं जानता हूँ। सरदारजी और न उनके मन की चीजे ही
 पकाता है। बादर सड़क पर कुदरा अभी भी ढाना है,
 सूरज की किरणों का पता नहीं है, कुलचे - छोवेवाले टैक्षण्य
 ने अपनी रेडी लाकर खड़ी कर ली है।
 सात नंबर की बस छूट रही है। सूलियो पर लटके इसा
 उसमें चले जा रहे हैं। और क्यू में खड़े और लोगों की
 कंडकटर प्रशंसी बिकट छाट रहा है। दूर बार जब श्री
 रह वैसे वापस करता है तो रेजगारी की खुनक यहाँ तक
 आती है। धूँध में लिपती रुद्दों के दीय काली तर्दी ताला
 कंडकटर शीतान की तरह लग रहा है।


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④ ಈಚೆನ ಸ್ತ್ರೀರೆನ್:-

ಬ್ರಹ್ಮಗ್ರಹ ಪ್ರವರ್ತನೆ:- ಅಂತರಾಳದಲ್ಲಿ ವ್ಯಾಹಾರವೇ ಶಂಕಾರಣೆಯಲ್ಲಿ
ದ್ವಿತೀಯ ಉತ್ತರಾಂಶದಲ್ಲಿ ಅಧಿಕಾರಿ ಅಧಿಕಾರಿ ಅಂತರಾಳದಲ್ಲಿ ಅಧಿಕಾರಿ ಅಧಿಕಾರಿ ಅಧಿಕಾರಿ
ದ್ವಿತೀಯ ಉತ್ತರಾಂಶದಲ್ಲಿ ಅಧಿಕಾರಿ ಅಧಿಕಾರಿ ಅಧಿಕಾರಿ ಅಧಿಕಾರಿ ಅಧಿಕಾರಿ ಅಧಿಕಾರಿ ಅಧಿಕಾರಿ
ಅಧಿಕಾರಿ ಅಧಿಕಾರಿ ಅಧಿಕಾರಿ ಅಧಿಕಾರಿ ಅಧಿಕಾರಿ ಅಧಿಕಾರಿ ಅಧಿಕಾರಿ ಅಧಿಕಾರಿ ಅಧಿಕಾರಿ ಅಧಿಕಾರಿ

② ମାରୁ ଶେଷ୍ଟୁଠି ଯତ୍ନରେ;

⑥ କର୍ତ୍ତାଙ୍କରେଣ୍ଟର ଅନୁଷ୍ଠାନ୍.

ಮುಕ್ತ ಅಂತರಾಷ್ಟ್ರೀಯ ವ್ಯಾಪಾರವೇ ಒಂದು
ಅತ್ಯುತ್ತಮ, ವರ್ತನೆಯು ಬರ್ಧಿಸಿಕೆ ಉತ್ತರಿಸಬಹುದು. ಪರಂಗಣವಳಿನೆ
ಅಂತರಾಷ್ಟ್ರೀಯ ವ್ಯಾಪಾರದ ಸ್ವರ್ಗವಾಳ ಮೊತ್ತಾರ್ಥಿಯು ಸ್ವರ್ಗಾಳ
ಮತ್ತು ಯಾರು ನರಹಿತಿಗೂ ನಡೆವ ಸ್ಥಳಿಗೆ ವಿರಚನೆತ್ವ
ಾನಂದ ಸ್ವರ್ಗ ಎತ್ತಾರಲ್ಲಿ, ಅಭಿಂದಿಕಾರಿ ಗೋತ್ತಮ

② ତେତୀଏ ଫଂକ୍ଷନଙ୍କୁ :

ಕ್ಷಮೆ, ಓರುಣ್ಣಿ @ ತುತ್ತೀ ಹುಟ್ಟಿಸಿ
ಓವ್ವುಡ್ ವಿಶ್ವಾಸೆ ಶಾರತೀಯಂತಹಾನ್, ಈ ವಿಶ್ವಾಸಸ್ವಾ ಇರ್ಲೇ
ರಾಷ್ಟ್ರಗ್ರಂಥ ಸ್ಥಾಪನೆ, ವೆಚ್ಚಕುಂಡ್ಲೆ ತುತ್ತೀ ಹುಟ್ಟಿಸಿಸ್ವಾ
ಓರುತ್ತಿರ್ದೀಗ ಉಂಬಿಬಾಳ್ಯಾ.



⑤ ಬೆಲ್ಲಗೋಡ್ ಶಿರ್ತೆ :

ಖಂತರಾಷ್ಟ್ರಿಯ ವ್ಯಾಪಾರದ ಅನುಕ್ರಮ
ವಸ್ತುಗಳ ಬೆಲ್ಲಗೋಡ್ ನಲ್ಲಿ ಪ್ರೋಟೋಸ್ಟ್ರೀನ್ ಮಾರ್ಗ;
ಅವನ್ನಿಂದ ಶಿರ್ತೆಯನ್ನು ರಾಂಪುರ್ಕೋಡ್‌ಲು ಪ್ರಂಭಿಸಿ
ಂತಹಿಗೆ, ಕುದ್ದಿಯಾಗುತ್ತದೆ.

⑥ ಬಂಡವಾಗ್ಧಲ ಪ್ರೇಲನೆ

ರಾಷ್ಟ್ರ-ರಾಷ್ಟ್ರಗಳ ಸಂಘ ಶ್ರಮಿ ಕಾಗ್ಯಾ ಬಂಡವಾಗ್ಧಲ
ಪ್ರೇಲನೆಗೆ ವ್ಯಾಪಾರದ ಕೊಡುಗೆ ಪ್ರಾಣತ್ವರವಾದು. ಶ್ರಮಾಂತ
ರುತ್ತಿಗೆ, ಬಡೆಯಿಕೆಗಳ ಫಾಲಕ ರೂಪದಿಂದ ಬಂಡವಾಗ್ಧ
ಉಂಟಾಗುತ್ತದೆ.

⑦ ಬಹುಧನೆ ಕೊಕೆಲತೆಯೆಂಬು ಅರಮಾಂತ್ರಿ :-

ಬಹುಧನೆ ವ್ಯಾಪಾರದ ಕೊಕೆಲ ವಸ್ತುಗಳೇ
ಅಲಮಾಂತ್ರಿ ವಾಗಣವುಣ್ಣಿ. ಅದರ ಕೊಕೆಲ ಉತ್ಪಾದನೆ ತೆರೆರೆ
ಮಿತ್ತ ನರಗಳ, ಉದ್ದೇಶ ಶಾಲಕೆ, ವೈದಿಕ ವೈಜ್ಞಾನಿಕ
ಗ್ರಂಥಾಲಯಗಳ ಮಾರ್ಪಾತ್ರಿಕೆಯಾಗಿತ್ತದೆ

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Sociology Assignment

Factors of changing The Caste System.

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Factors Of Changing The Caste System



The Caste system in its attempts to adjust ~~itself~~ to the changed conditions of life has assumed new roles. Besides Industrialisation and Urbanisation, other factors such as Westernisation, Sanskritisation, re-organisation of Indian States, spread of education, Socio-religious reforms, spatial and occupational mobility and growth of market economy have greatly affected the caste system. Changes in the role of caste system must also be understood in the light of the influence of these factors.

1] Decrease in the Rigidity of Caste and Untouchability:-

Caste had become less rigid now. Social and religious privileges and disabilities born of caste are no longer recognised in law. They are partially practised in custom. Similarly, occupations have become more a matter of personal choice than a ~~matter~~ of custom rule. They are no more hereditary in character.

The practise of untouchability which is often called "the halefallest expression of caste", has been declared a punishable offence. The difference between "touchable" and "untouchable" is not very sharp. There is greater tolerance towards the members of lower caste.

2] Changes in the Communal Rules:-

Communal rules refer to the norms relating to the food habits of the people. Caste no more controls the food habits of the people. The communal taboos, that is restrictions imposed on interdining, has been relaxed. Distinction between "pakka food" and "kaccha food" is no more found. The Brahmin's dominance of hotel industry is fading away. Brahmins also invite their friends and other important persons, who belong to lower castes to their homes and share food along with them.

3] Growth of Classes within Castes:-

India is a caste as well as a class-ridden society. Both the types of stratification, that is, caste and class, are found working here simultaneously. At one stage in our social history, the upper castes represented the wealthy class, and lower castes, the poor class. But many individuals and families belonging to the lower caste have become richer today. Thus, with the inclusion of the economic dimension, caste appears like a manifold class system.

4] Increase in the Organisational Power of Caste:-

Education makes people liberal, broadminded, national and democratic. Educated people are believed to be less conservative and superstitious. Every caste wants to safeguard

its interests. For fulfilling this purpose castes themselves organised on the model of labour unions. These caste-based organisations are also trying to project the leadership of some of their members to serve as their spokesmen.

5] Political Role of Caste:-

Caste and politics have come to affect each other now. Caste has become an inseparable aspect of our politics. In fact, it is tightening its hold on politics. Elections are fought more often on the basis of caste. Thus, unless one knows the political confrontation between the dominant caste such as Lingayats and Vokkaligus in Karnataka and Reddys and Kammars in Andhra Pradesh, one cannot understand the politics of these two states.

6] Protection for scheduled Castes and Other Backward class:-

India has made enough provision to protect the interests of scheduled caste and tribes in the Indian constitution. They are offered more political, educational and service opportunities through the reservation policy. According to M.N. Srinivas,

"The provision of constitutional safeguards to.... scheduled castes and tribes has given a new lease of life to caste." These provisions have made some of them develop vested interests to keep permanently the benefits of reservation.

7] Sanskritisation and Westernisation:-

As M.N. Srinivas has pointed out, two important trends are witnessed in caste - the process of sanskritisation and that of Westernisation. The former refers to a process in which the lower caste tend to imitate the values, practices and other life-styles of some dominant upper castes. The latter denotes a process in which the upper-caste people tend to mould their life-styles on the model of Westerners.

8] Backward Classes Movement:-

The non-Brahmin caste today are getting themselves more and more organised to challenge the supremacy of the Brahmin and to assert their rights. The establishment of 'Satyashodak Samaj' by Jyotirao Phoooley in Poona in 1873 marked the beginning of such a non-Brahmin movement. The Backward class movement has become a vital political force today. Its influence has changed the political scenario of the country. This movement has made the Brahmins politically weak and insignificant especially in Kerala and Tamilnadu. Due to this pressure, Backward classes Commissions were established at central and state levels which recommended "reservation" for backward castes.

9] Competitive Role of Castes:-

Mutual interdependence of castes which existed for centuries and was reinforced by the institutional system of "gajmani", is not found today. As M.N. Srinivas points out, the "vertical solidarity" of castes has been replaced by "horizontal solidarity". "Live and let live" policy which was once associated with the caste makes no sense today. On the contrary, each caste looks at the other with suspicion, contempt, and jealousy and finds in it a challenge, a competitor. Excessive caste-mindedness and caste-patriotism have added to this competition. This competitive spirit further strengthens caste-mindedness.

10] New attempts to strengthen caste-loyalty, caste-identity, Caste-patriotism and Caste-mindedness :-

Today, caste organisations are increasing and are making every attempt to obtain the loyalty of their members and to strengthen their caste-identity and solidarity. Some such attempts can be cited here.

i] Though Caste Panchayats are dwindling, Caste organisations are on the increase. Some of these organisations have their own written constitutions and managing committees through which they try to preserve some of the caste rules and practices.

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- ii) Caste organisations run their own papers, bulletins, periodicals, monthlies etc., through which they regularly feed information to the members regarding the activities of caste organisations and achievements of caste-members.
 - iii) Attempts are also made to increase caste integration through the establishment of caste based trusts and trust-units. They provide shelter to the needy members of the caste. They offer scholarships to the poor students of the caste. Some of them run schools, colleges, hostels, maternity-homes for caste members and so on.
 - iv] The occupational caste are making determined efforts to improve the economic conditions of caste members by establishing co-operative credit and industrial societies.

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प्रकृत मिथा गवा:

रामा रमा

वीरशैव डिप्री कौमुदी अमिती

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सत्याहक

रचनामार : मुशी प्रेमचंद



प्रेमचंद जी का जन्म 31 जुलाई 1880 को वाराणसी निल (उत्तर के प्रदेश) के नमही गाँव को पक काचूल्य पटिकार में हुआ था। उनकी माता का नाम आनन्दी देवी नवा

पिता का नाम मुंशी उनजायबराय था जो लगड़ी में डाकमुंशी थे। उनका वास्तविक नाम धरपत्र शर्प शीवासन था। प्रेमचंद (प्रेमचन्द) की अारम्भिक शिक्षा फारसी में हुई,

हिंज पकसीलसी वाइसराय कवाइसी आरे
धे। सरकारी कर्मियारी, छोड़ से बड़े लक, उनके
स्वागत की नृथालिया, कर रहे थे। उदार कोरस
में हड्डाने गवाने की सूचना दे दी थी। इसरी
कर्मियारी में बड़ी हळियत थी। पक और सहवा पर
झाँड़ियाँ लगाए जा रही थीं, सफाई हो रही थीं, पंडाल

खो साहब ने पहली मात्रा - वक्त इतना कम रह गया है कि दुसरा बाजार चाहे वही हो सकता। हुजूर कांग्रेसवालों को भिराए बना दिया, या उनकी भाषणादृष्टि खो दिया, या दैरिया की बाबू में वही आते, राजा साहब लोला अफुन्डा धकड़ से ने लोग और इन्होंने, कांग्रेस द्वारा हुजूर है कि दुम हड्डियाँ बन्द करा दो सबको सरकारी लोकी दी दी जाएगी। उसमें आधकांश बोकार तो है, यह प्रतिशत पाते हैं पूल तो है,

आखिर राज साहब को पक थुकी थुकी, सुझी, फर्जी न हो लोग यही बैठक बन का प्रथम करें? आखिर कांग्रेसवाले यह नुमार बोंधते हैं, हम लोग यही तुम्हीं का अवकरण करके पसा आदमी पदा करना चाहिए, जो ब्रिटिश के दुकाने न खुली, जो मैं प्राण दे दूँगा। यह ज़रूरी न कि बड़े ब्राह्मण हो और पसा, जिसकी शर्त के लिए मानते हैं।

साहब ने कहा - बस, अब पढ़ाव माटे लिया। अच्छा, पसा कोन परि है; परिवर्तन रासाधर नहीं,



राय हड्डनवन साहब, राजा नालचन्द और
 खों बद्रादुर मालवी गणमान अभी ने कर्मचारियों
 से शीघ्रांति लेने चाहे। मैट्रिस्ट्रेट के साथ-साथ और
 अकेले शीर्षों को शिशा करते थे। अपने ग्रनात पर दुलाल
 दुकानदारों को समझाते, उन्नुनेच विवरण दर्शाते, और
 दिखाते, उनके बर्धीवालों को धमकाते, गजदूश की
 खुशगान्धी कहते; पर कंगोस के गुटी-थठ आदियों
 का कुछ भोजा आंख छापा हुआ था कि कुछ
 इनकी सुनता ही नहीं, यहूँ तक कि पड़ोस की
 कुछ लिंग वे शीर्षों द्वाकर कह दिया - हुजूर,
 पाई मार डालो पर दुकान व खुलगी, नाक
 वे कटवाकरी, सब थे बड़ी चिन्ना थे वे शीर्षों
 की कमी पड़ाल बनावाले हाजदूश, बद्रु, लालू
 बगौर कान व छोड़ दी, बड़ी वो अनधि ही ही
 खापगा। सब साढ़े बने कहा - हुजूर, हुसैर
 राजू से दुकानदार बुलवाएं और पक
 बाजार अलग खोले,

शहर की गलियों में और फौज और पुलिस के सड़कों पर कवाराएं करते थे। कम्बियाईयों की सिरतोड़ कोशिश थी कि हड्डाल व होवे पाप, अगर कांग्रेसियों की धुन थी तो हड्डाल दो और जस्ते हो। उस बार दोनों की पश्चिमा हु जाप की भेदान किसके हाथ रहता है।

धोड़े पर सबार माझिस्ट्रेट सुब्रह्मण्य से शाम तक दुकानदारों को गभिस्ट्रेट देना भिरता कि पक-पक की जेल विख्वा हुआ, बाजार लुटवा हुआ, पट्टी स्ट्रेट आई वह कहुँगा। दुकानदार हाथा बोधका कहते - हुण्डर बादशाह हैं, विद्यार्थी हैं, जो चाहते कर सकते हैं। कांग्रेसवाले हमें जीता व हाउंगे, हमारी दुकानों पर धरने होंगे, हमारे ऊपर बाल बढ़ाएंगे कुपं में गिरेंगे। उपवास करेंगे। कोन जावे, दो-याट कामियां पुर जाएंगी। हुण्डर उच्छी कांग्रेसवालों की समझाएं, तो हमारे ऊपर उपर बढ़ा पहसाव थोड़े होगी। देश के बड़े-बड़े आदमी आवेंगे, हमारी दुकानें खुली रहेंगी, तो पक के दो लंगे, मट्टी सोडे लेंगे; पर कहे कथा तुन, दोनों से कीड़े बस



राजा साहब ने तुरन्त पंडित मोदीराम के घर सन्देश भेजा। समय शास्त्रीजी पूजा पट थे। यह पंगाम सुनते ही खल्दी से पूजा समय

की ओर थे। राजा साहब ने बुलाया है, धन्य धाग। धरपिणी से गोले आज चन्द्रगा कुछ बली गालुम होते हैं। कपड़े लाते, देखते, खिंचते हुलाया हैं।

~~खड़ी~~ के कहा - रोजन तैयार है, करते खाते व खाते कब लाट का अवसर मिले।

~~किन्तु~~ शास्त्रीजी ने आदमी को इतनी देर खड़ा रखना उचित समझ, जाउँ के दिन थे। ही बनाते की अचकन पड़ती, जिस पर लाल राजामुख छल्की हुई थी। गले में पक जरी दुपदा डाला। ~~लिए~~ ~~लिए~~ बनारसी साफा कांधा, लाल चपड़े किनारे उशमी धोती पड़ती खड़ाऊँ पर थे। उनके मुख से ब्रह्मतेज उपकरा था। दूर ही से गालुम होता था की कोई माझाभा छा रहे हैं। ~~उन्हाँ~~ बालकों से दैसकर बातें करते हैं। इस ठोट से पंडितजी राजा साहब के मानाने पर पहुँचे, नीनों गिरों वे खेल होकर उनका सम्मान किया।

रोजा साहब - आप लोग उम्रका मतलब
 नहीं समझ सकते, बुहुदि पक्ष प्रकार का वजला है,
 जब दिमांग में नहीं समाची, तो जिट्टम में यह जारी
 है। खाँ साहब - मैंने तो बजुगाँ की जबाबी सुना
 है कि मोटे आदमी अकल के दुष्क्रमन होते हैं।

राशा साहब - आपका इसाब कगजोर था,
 बरवा आपकी समझ में इतनी बात जहर था
 जाती कि अकल और जिट्टम में, और 10 की
 विस्तृत है। तो जितना ही मोटा आदमी होगा,
 उन्हाँ उसकी अकल का वजन भी जादा
 होगा।





माटोगां वे गरबीर भाव से उन्ने लिया -
 यह को कोई पेसा कविन काम नहीं है। मैं
 ने देखे - पसे उत्तुषान कर सकता हूँ कि
 आकाश से जल की बर्बादी क्षण हूँ; मरी के प्रकोप
 भी भी शान्त कर दूँ; अब तो भाव धूम-धूम
 है? कांग्रेसवालों की पश्चात् मैं देवा ने
 कोई बड़ी लात नहीं। अंग्रेजी जट-लिये
 महान् भाव संग्राम है कि जो काम हम कर
 सकते हैं, वह कोई नहीं कर सकता। पर
 गुप्त विद्यालयों में उन्हें भी ज्ञान नहीं।



SURVEY ON VACCINATION

(At Anganwadi and Government Hospital)

VIMS & Anganwadi in Kongala,
urban health Care.

SUBMITTED BY:

Mahalakshmi G

5th semester (CBBT)

S2011099

[Mahalakshmi G]

SUBMITTED TO:

Smt. Anuradha. K (M.Sc B.Ed)

DEPARTMENT OF BIOTECHNOLOGY

(2022-2023)

Spatti
COORDINATOR,
Internal Quality Assurance Cell (IQAC),
VEERASHAIVA COLLEGE,
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BALLARI

Survey of vaccine (Immunisation)

Immunization :- A process by which a person becomes protected against a disease through vaccination.

- Stimulating immune responses with an infectious agent is known as immunisation.

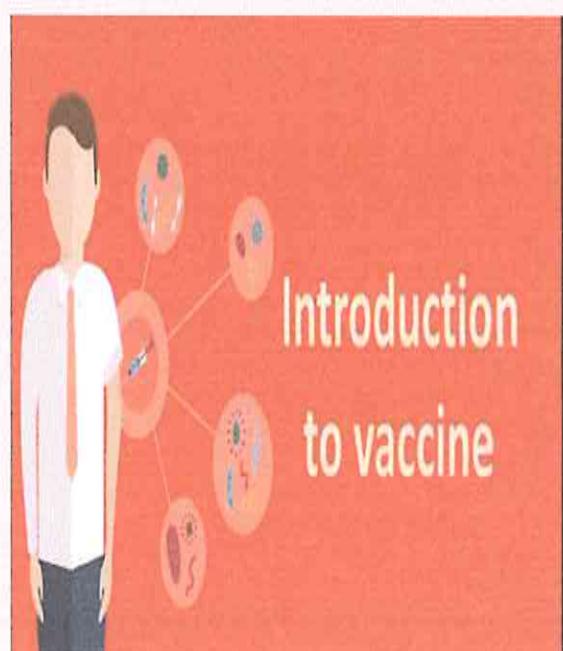
Vaccination:- it is a term used for getting a vaccine by injection or an oral dose.

Vaccines are a way of artificially activating the immune system to protect against infectious disease.

Different types of vaccines

Vaccines typically contain attenuated, inactivated or dead organism or purified derived from them.

- There are several types of vaccines in use.
- These reduce risk of illness while retaining the ability to induce a beneficial immune responses.





Vaccines for pregnant women.

1. Pregnant women are provided with three different vaccines in that period.
2. In the first three months of pregnancy:-
3. TT - 1 :- first dose of TT is given at third month of pregnancy
- TT - 2 :- the second dose is given after one month of TT 1 dose.
- TT booster :- It is given to women who already has a child, and in her second pregnancy between the period of three years.

Pregnant woman getting her three months TT vaccine in kolagallu village anganwaadi in ballari



Different vaccines for children

At birth :-

1:BCG:- bacille calamelle guerin.

- This vaccine is given to provide immunity against tuberculosis.

Dosage : 0.05 ml

- This vaccine is intradermal.
- This is given to left hand upper arm.

2: Hepatitis b :- This vaccine is given to a child within 24 hours of birth.

Dosage:- 0.5 ml

- It is an intramuscular injection.
- It is given to anterolateral side of left mid thigh.

3: OPV - O :-

- OPV is a oral polio vaccine.
- It is given within 15 days of birth.
- It is a oral vaccine, with two drops.

At VIMS , a newly borne baby getting the vaccines.





3) OPV :-

- This includes three doses.
- i) OPV - 1 :- It is given at 6 weeks of birth of a baby.
- ii) OPV - 2 :- It is given at 10 weeks.
- iii) OPV - 3 :- It is given at 14 weeks of birth.
- These three vaccines are oral, includes 2 drops.
- This provides immunity against polio disease.

4) PENTAVALENT :-

- This vaccine includes three doses, first one at 6 weeks, 10 weeks, 14 weeks.
- This vaccine provides immunity against 5 diseases, hence named Pentav.
- These diseases are Diphtheria, pertussis, tetanus, hepatitis b, Hib.
- Dosage:- 0.5 ml for each dose.
- It is an intramuscular injection.
- It is given to left mid thigh.

5) IPV:-

- It is an inactivated polio vaccine.
- It is given at 0 th and 14 th week.
- Dosage:- 0.1 ml.
- It is an intradermal vaccine. It is injected to right arm.

Injections of 0.5 ml and 1.0 ml. A 10 week child getting a dose of pentavalent in urban primary health care centre, ballari.



6) Rotavirus vaccine :- This vaccine provides against Rotavirus.

- This vaccine is given at 6 weeks, 10 and 14 weeks.
- This is an oral vaccine. 5 drops at once.

7) PCV :- It is a pneumococcal conjugate vaccine.

- It is given at 6 th week and 14 th week.
- Dosage:- 0.5 ml.
- It is an intramuscular injection.
- This vaccine provides immunity against pneumonia, meningitis.
- At 9 completed months gets a booster pcv.



8) Measles and rubella vaccine:-

- This vaccine is given to provide immunity against the measles and rubella.
- It is given to child of 9 months to 12 months.
- Dosage :- 0.5 ml.
- It is a subcutaneous injection given to right arm.

9) Japanese Encephalitis:-

- It is given to a 9 months -12 months child.
- Maximum age limit is 15 years.
- Dosage :- 0.5 ml.
- It is a subcutaneous injection, given to left arm.
- It is a inactivated vaccine.

J E vaccine. And child getting a J E vaccine.



10) vitamin A vaccine:-

- The first dose of vitamin A is given at 9 months.
- Maximum age for the vaccine is 5 years.
- Dosage :- 1 ml.
- It is a oral vaccine.
- It is important for immunity.
- It amplifies non specific immune modulation induced by vaccines



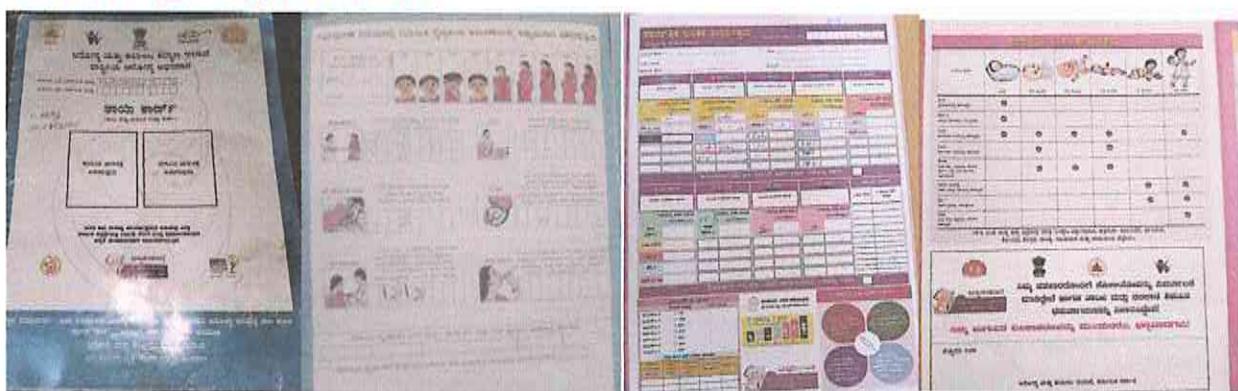


The chart of different vaccines.

ರಾಜ್ಯಾ ಸ್ವಿಂಬರಿಗೆ	
ಅವಧಿ	ಜ್ಞಾನಮಣಿ
3 ತಿಂಗಳು ಮುಂಚಿದ ನಂತರ	ಟ.ಟ-1
ಟ.ಟ-1 ಪಡೆದ 1 ತಿಂಗಳ ನಂತರ	ಟ.ಟ-2
ಮೊದಲ ಹೆರಿಗೆಯಾಗಿ 3 ವರ್ಷದ ಒಳಗಡೆ	ಟ.ಟ. ಖಾಸ್ರೋ
ಪುನಃ ಗಭಿರಣೆಯಾದರೆ	

Vaccine	Protection From	No. of Shots	
BCG Vaccine	Tuberculosis	1	At Birth
Hep B Vaccine	Hepatitis B	3-4	1st Dose at birth 2nd Dose at 1-2 months of age 3rd Dose at 4 months of age 4th Dose between 6-18 months
DTaP	Diphtheria, Pertussis, Tetanus	5	1st Dose at 2 months 2nd Dose at 4 months 3rd Dose at 6 months 4th Dose at 15-18 months 5th Dose at 4-6 years
IPV Vaccine	Polio	Polio	1st Dose at 2 months 2nd Dose at 4 months 3rd Dose at 6-18 months 4th dose at 4-6 years
RV Vaccine	Rotavirus/ Gastroenteritis	2-3	1st Dose at 2 months 2nd Dose at 4 months 3rd Dose at 6 months
MMR Vaccine	Mumps, Measles, Rubella	2	1st Dose at 12-15 months 2nd Dose at 4-6 years
Typhoid Conjugate Vaccine	Typhoid	2	1st Dose at 9-12 months Booster at 2 years
Hep A Vaccine	Hepatitis A	2	1st Dose at 1 year 2nd Dose 6 months or 1 year after the first dose

The Taayi card is provided for every pregnant woman, which gives a whole information regarding vaccination schedule before and after pregnancy.





* child vaccination rates vary widely across states, ranging from 17% to 76% receiving their first dose. About 8.4 million children 12-17 had yet to receive their first COVID-19 vaccine dose. This past week about 11,000 received their first vaccine dose.

Conclusion:-

- Therefore the survey was knowledgeable and got a lot of information regarding vaccination.
 - And had practical experience.
 - providing free vaccination for pregnant women and children in their own villages and cities having these health care centres made people easy and helpful.



A picture of registration of people for different vaccination on Thursday in kolagallu.

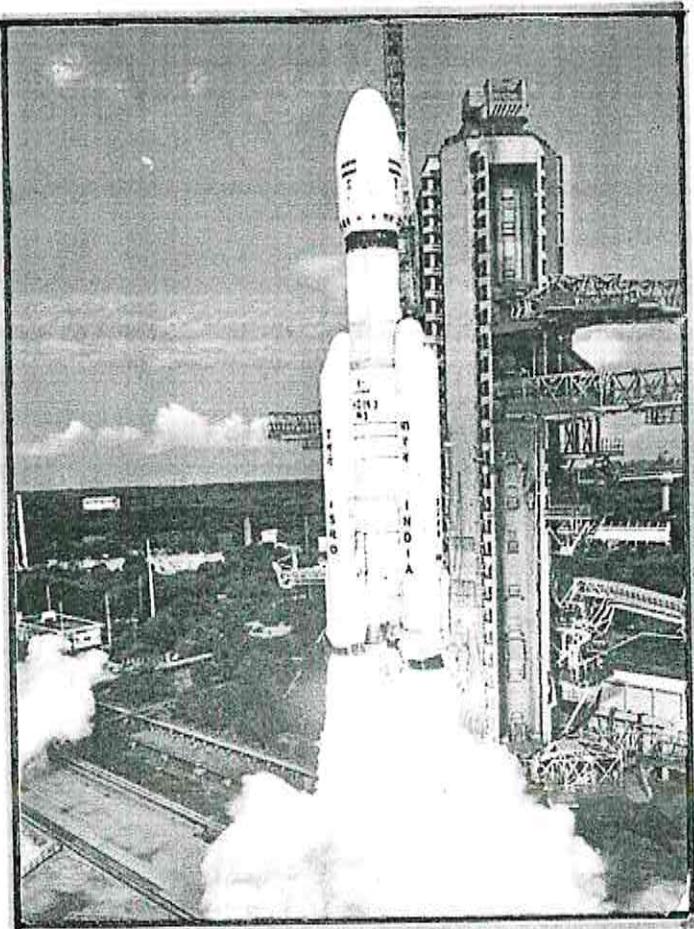
Nurse mrs jalaja of vims hospital provided a lot a information regarding immunisation and vaccines



Geetie
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Internal Quality Assurance Cell (IQAC),
VEERASHAIVA COLLEGE,
BELLARY-KARNATAKA,

PRINCIPAL
VEERASHAIVA COLLEGE
BALIARI

Assignment on Chandrayaan-3



Name :- Tinkarapalli Swetha.

Reg-No :- S2011213.

Class :- B.Sc [PMCS].

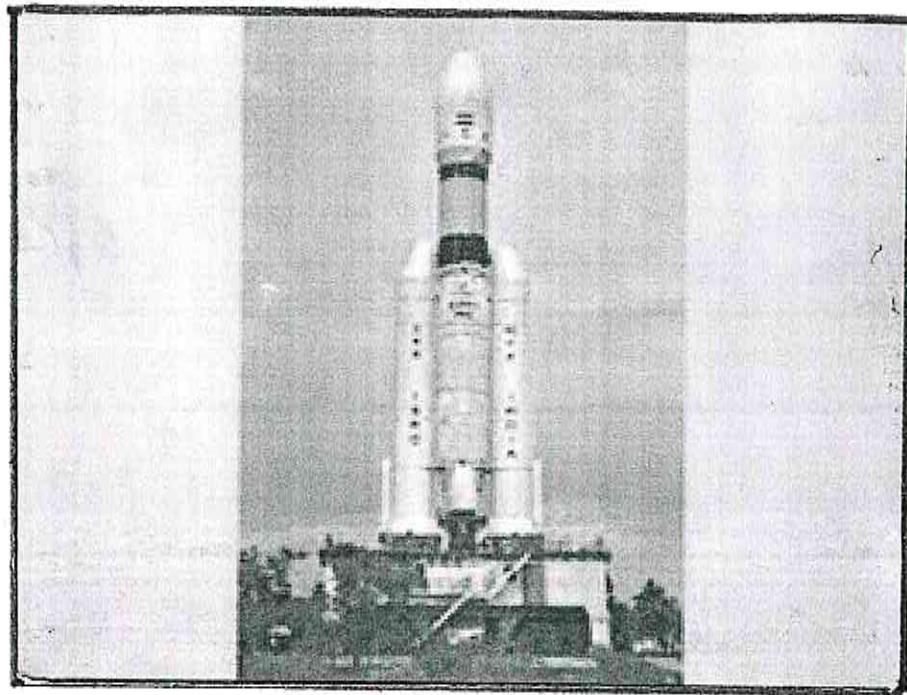
Sub :- Chandrayan-3 [Physics]

Submitted to :- Physics department.

College :- Teerasthaiva College.

Chandrayaan-3

(1)



Chandrayan-3 is the third and most recent lunar exploration mission under chandrayan programme. It consists of a lander named "Vikram" and a rover named pragyan similar to chandrayan-2, but does not have an orbiter. Its propulsion module behaves like a communication relay satellite.

The propulsion module carries lander configuration until the spacecraft is an 100 km lunar orbit.

Spacecraft properties:-

Bus → Chandrayan

Manufacturer → ISRO

Launch Mass → 3900 kg

Payload Mass → Propulsion module : 2148 kg

Lander Module (Vikram) : 1752 kg

including rover (Pragyan) of 26 kg

Total : 3900 kg.

Power → Propulsion module: 758 W
 Lander Module : 738 Ws with Bias
 Rover : 50 W

Start of Mission:-

Spacecraft Component → Rover

Landing date → 24 August 2023,
 17:47 IST (12:17 UTC)

Landing site → 69.367621 S

32.348126 E^(s)

following Chandrayaan-2, where a last minute glitch in the landing guidance software led to the lander crashing after entering lunar orbit, another lunar mission was proposed.

The launch of Chandrayaan-3 took place on 14 July 2023, at 2:35 pm IST and lunar injection of 100 km circular polar orbit was completed successfully as part of phase one. The lander and rover are expected to land near the lunar south pole region on 23 August 2023.

The Chandrayaan-3 took place on 14 July 2023, at 2:35 pm IST and lunar injection of 100 km circular polar orbit was completed successfully as part of phase one. The lander and rover are expected to land near the lunar south pole region towards ISRO's future interplanetary missions.

* Background :-

As part of the Chandrayaan programme to demonstrate soft landing on the moon, ISRO launched Chandrayaan-2 on board a launch vehicle Mark-3 (LVM-3) launch vehicle consisting of an orbiter, a lander and a rover. The lander was scheduled to touchdown on the lunar surface in September 2019 to deploy the Pragyan rover.

The European Space Tracking (ESTRACK) operated by European Space Agency (ESA) will support the mission according to a contract. Under the new cross-support arrangement, ESA tracking support could be provided for upcoming ISRO missions such as those of India's first human spaceflight programme, Gaganyaan, the Chandrayaan-3 lunar lander and

the Aditya-L1 Solar research mission. In return, future ESA missions will receive similar support from ISRO's own tracking stations.

* Objectives:-

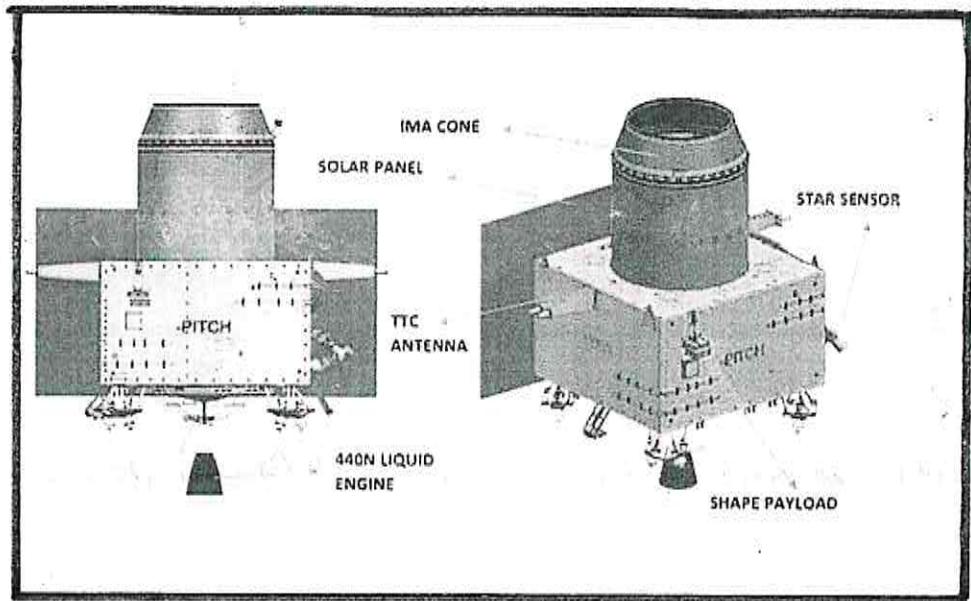
ISRO has set three main objectives for the Chandrayaan-3 mission, which include:

- (1) Getting the lander to land safely and softly on the surface of the moon.
- (2) Observing and demonstrating the rover's loitering capabilities on the Moon.
- (3) In-situ observation & conducting experiments on the materials available on the lunar surface to better understand composition of the moon.

* Design:-

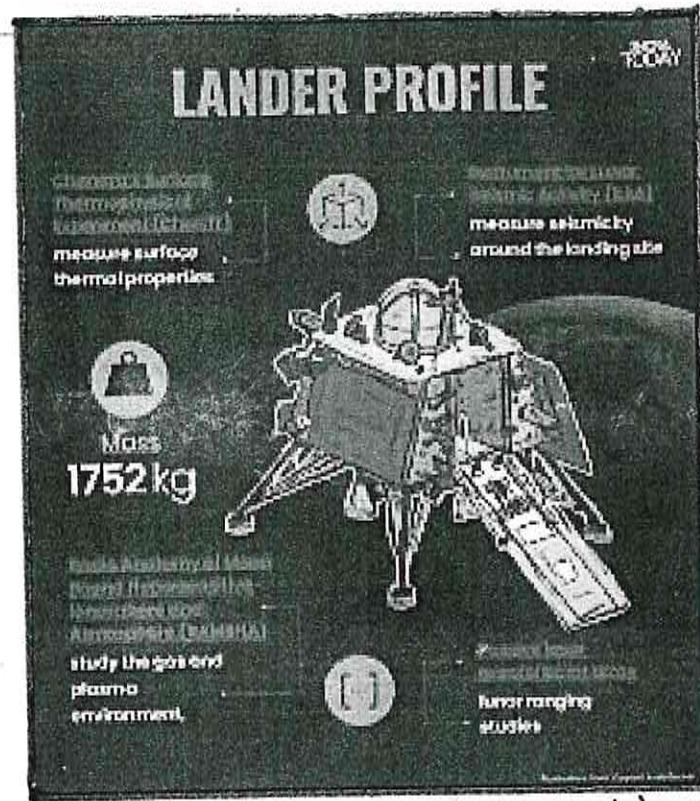
Chandrayaan-3 comprises three main components.

Propulsion Module:-



The propulsion module will carry the lander and rover configuration till 100 km lunar orbit. It is a box-like structure with one large solar panel mounted on one side and a large cylinder on top that acts as a mounting structure for the lander. In addition to the lander, the module carries a payload called spectro-polarimeter of habitable planet earth (shape) to study the spectral and polarimetric measurements of Earth from the lunar orbit in the near-infrared (NIR) wavelength range (1-1.7 μm).

* Lander:-



The lander is responsible for the soft landing on the moon. It is also box-shaped, with four landing legs and four landing thrusters of 800 newtons each. It will carry the rover and various scientific instruments to perform in-site analysis.

The lander for Chandrayaan-3 will have only four throttle-able engines, unlike Vikram on Chandrayaan-2 which had five 800 Newtons engines with a fifth one being centrally mounted with a fixed thrust.

Additionally, the Chandrayaan-3 lander will be equipped with a Laser Doppler Velocimeter (LDV). The impact legs are made stronger compared to Chandrayaan-2 and increased instrumentation redundancy. ISRO is working on improving the structural rigidity and adding multiple contingency systems.

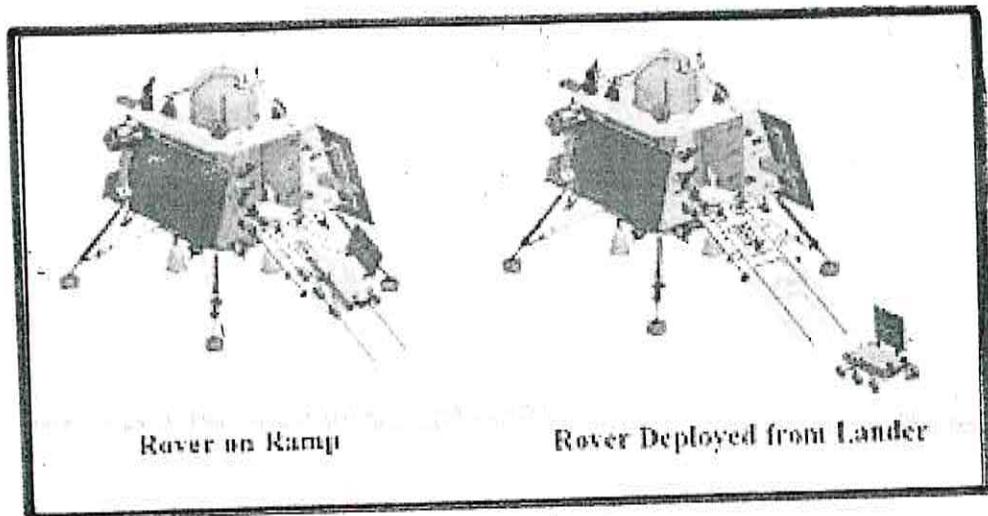
The lander has three payloads:-

⇒ Chandra's Surface thermophysical Experiment (cha STE) will measure the thermal conductivity and temperature of the lunar surface.

⇒ Instrument for lunar seismic activity (ILSA) will measure the seismicity around the landing site.

⇒ Langmuir Probe (LP) will estimate the plasma density and its variations.

Rovers



Chandrayaan-3 Rover Overview:-

- Six-wheeled design.
- Weight of 26 kilograms (57 pounds)
- Range of 500 metres (1,600 ft)
- Scientific instruments including cameras, Spectrometers, and a drill.
- Expected lifespan of one lunar day (14 earth days)

VV Sangha's



Veerashaiva College, Ballari-583102

DEPARTMENT OF PG STUDIES IN ZOOLOGY

Course Title :

(P-1) BIOLOGY OF CHORDATES

Course Code :

21ZOO2C5L

Title Of Assignment :

ORIGIN, ADAPTIVE RADIATION & EVOLUTION

Submitted By :

RODHA. PATIL

Semester :

M.Sc IInd Sem

Register Number :

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REPTILES



ORIGIN, ADAPTIVE RADIATION AND EVOLUTION

* ORIGIN OF REPTILES :

Introduction :

Reptiles are a diverse group of cold-blooded vertebrates that include animals such as snakes, lizards, turtles, crocodiles, and dinosaurs.

They are characterized by several key features, including scales, a shelled egg, and a number of anatomical adaptations that allow them to thrive in a variety of environments.

The origin of reptiles can be traced back to the Carboniferous period, approximately 350 million years ago, during a time known as the Paleozoic Era.

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At this point in Earth's history the dominant vertebrate animals were amphibians, which were well adapted to the aquatic and semi-aquatic environments prevalent during that time.

The transition from amphibians to reptiles was marked by several important evolutionary developments.

One of the key advancements was the ability to lay amniotic eggs, which allowed reptiles to reproduce on land, free from the constraints of water like amphibians.

These eggs had a protective membrane and allowed for the development of embryos in a terrestrial environment.

Another significant adaptation was the development of dry, scaly skin that helped reptiles conserve water and protect themselves from desiccation.

This adaptation, along with the ability to regulate their body temperature through behavior and external heat sources, enabled reptiles to colonize a wide range of habitats, including deserts, forests, grasslands and even the oceans.

The earliest reptiles were small and lizard-like in appearance. They belonged to a group called the Archosauria, which eventually gave rise to two major lineages of Reptiles : The Sauropsida and the Synapsida.

The Sauropsida included the ancestors of modern reptiles, birds, and dinosaurs, while the Synapsida eventually gave rise to mammals.

During the Mesozoic Era, which began approximately 252 million years ago, reptiles experienced a remarkable land vertebrates. This Era is often referred to as the "Age of Reptiles" due to the proliferation of





dinosaurs, flying reptiles called pterosaurs, and marine reptiles such as ichthyosaurs and plesiosaurs.

While dinosaurs and many other groups of reptiles went extinct around 65 million years ago, some lineages survived and continue to thrive today. Modern reptiles, such as snakes, lizards, turtles, and crocodiles, represent the descendants of these ancient reptilian lineages.

In summary, reptiles originated from a common ancestor with amphibians and underwent significant evolutionary changes, including the development of amniotic eggs and scaly skin. They emerged during the Paleozoic Era & diversified during the Mesozoic Era, becoming the dominant land vertebrates before the rise of mammals.

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Organic Chemistry :-



1 Mark Questions :-

D) Define Electrophiles And nucleophiles With Example?

Ans: Electrophiles - Any molecule, ion (or) atom that is deficient in electrons are called As Electrophiles The Reagent that Attacks the electron rich species are called Electrophile. They are generally positively charged (or) neutral species.

Example:- (a) positively charged - All Lewis Acids, H^+ , SO_3H^+ , NO_3^+ , Na^+ , X^- , R^+ , $\text{C}_6\text{H}_5\text{N}_3^+$, $\text{CH}_3\text{C}^{\oplus}\text{O}$ $\text{C}_2\text{H}_5\text{OH}$.

D) All Lewis Acids - BF_3 , AlCl_3 , SO_3 , ZnCl_2 , BeCl_2 , FeCl_3 , SnCl_4 , $\text{C}_2\text{H}_5\text{OH}$.

C) Neutral Atoms - $\text{C}=\text{O}$, R^+COCl , $\text{R}^+\text{Mg}-\text{x}$, I^-Cl , $\text{CH}_3-\text{C}^{\ddagger}\text{N}$, R^-Cl , R^-O .

Nucleophiles: The Electron Rich species are called As nucleophiles They are generally negatively charged (or) neutral with a lone pair of electron e.g. O^{\ddagger} , NH_3 , $\text{CH}_3-\text{C}^{\ddagger}-\text{CH}_3$. (Dimethyl Sulphide) $\text{Ph}-\overset{\ddot{\text{P}}}{\underset{\text{Ph}}{\text{I}}}-\text{Ph}$ (Triphenyl Phosphine)

Example:-

D) Negatively charged - H^{\ominus} , OH^{\ominus} , OR^{\ominus} , CN^{\ominus} , X^{\ominus} , $\text{R}-\text{COO}^{\ominus}$, NH_3^{\ominus} , $\text{CH}_3^{\oplus}-\text{COR}$, HSO_4^{\ominus} , NO_3^{\ominus} , CO_3^{\ominus}

B) Lewis Bases: $\text{R}^+\text{Mg}-\text{x}$, R^-Li , LiAlH_4 , $\text{CH}_3-\text{ON}^{\ominus}$, NaBH_4 , R_3Zn , R_3CuLi , Be_2AlH_5 .

C) State Saytzeff Rule And Markonikoff's Rule?

Ans: Saytzeff rule: "It states that if more than one Alkene is possible in a Reaction as a product then highly Substitution Alkene is the major product."

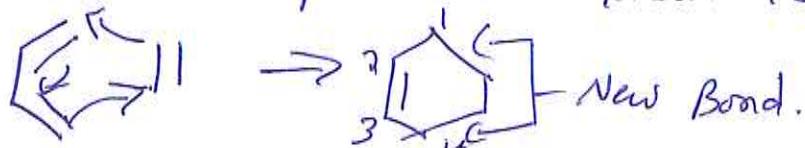
Markonikoff's Rule - It states that "When An unsymmetrical Reagent is Added to An unsymmetrical Alkene, the negative part of the Reagent is Attached to the unsaturated C-atom having no's of hydrogen Atoms.



3) what are pericyclic Reactions? Give An Example?

Ans:- A type of organic Reaction where, in the Transition State of the molecule has a cyclic geometry, the Reaction progresses in a concerted fashion, And the Bond orbitals, involved in the Reaction overlap in a continuous cycle At the transition State These are called pericyclic Reactions.

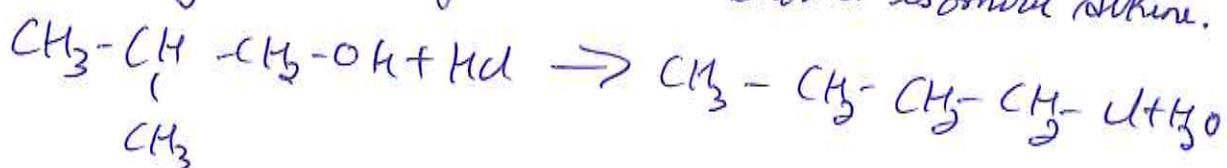
Eg:- The Best Example is "Diels-Alder Reaction".



4) what are Rearrangement Reaction? Give An Example?

Ans:- A Type of Reaction in which a molecule undergoes a Reorganization of its, constituent parts, This is called as Rearrangement Reactions:- For Example:-

- Alkene in heating with Strong Acid from another isomeric Alkene.



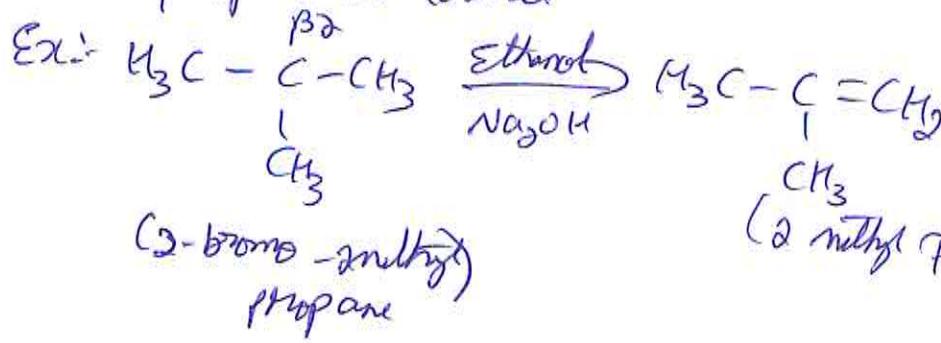
5 mark Questions:-

1) Define Elimination Reaction, Explain E,E,E₁ Reactions with the mechanism?

Ans:- A Type of organic Reaction in which two Substituents are removed from a molecule in either a one (or) two step mechanism. The one-step mechanism is called "E₁ mechanism".

And the two-step mechanism is known as the "E, Reaction".

E, Reaction:- It is also known as unimolecular - Elimination Reaction. This Reaction is particularly common in Secondary And ~~Tertiary~~ Alkyl halides in absence of a strong base. For Example, when 2-bromo 2-methylpropane, is treated with Aqueous Ethanol, 2-methyl propanoate is formed.

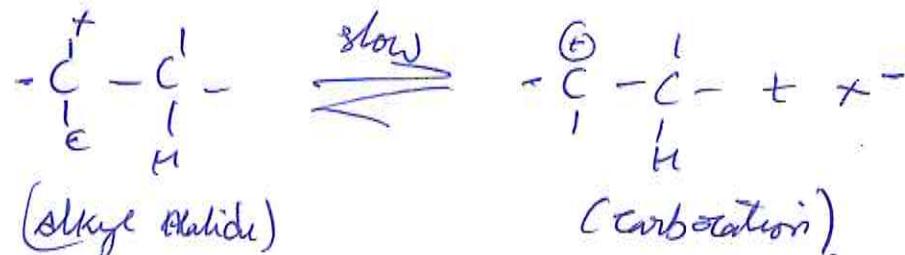


→ E, Reaction follows the "First order kinetics".

→ Mechanism:

E, Reaction is the two step process:

Step①: In this step the molecule of alkyl halide undergoes ionization to give a carbocation and halide ion.

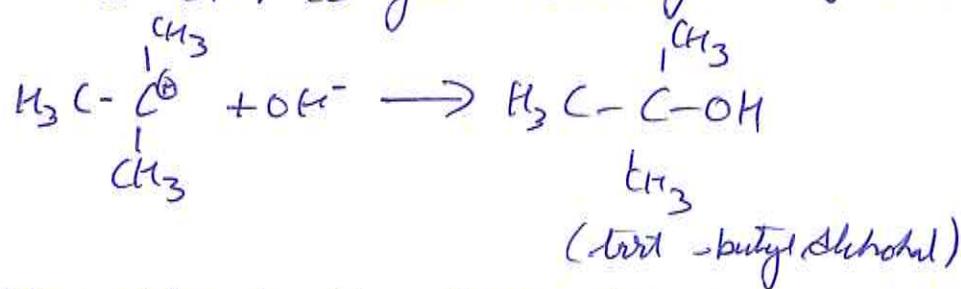


Step②: In this step the carbocation loses a proton from the adjacent carbon to yield the alkene.



In a chemical reaction the slow step is rate determining step so, first step is rate determining in E, Reaction.

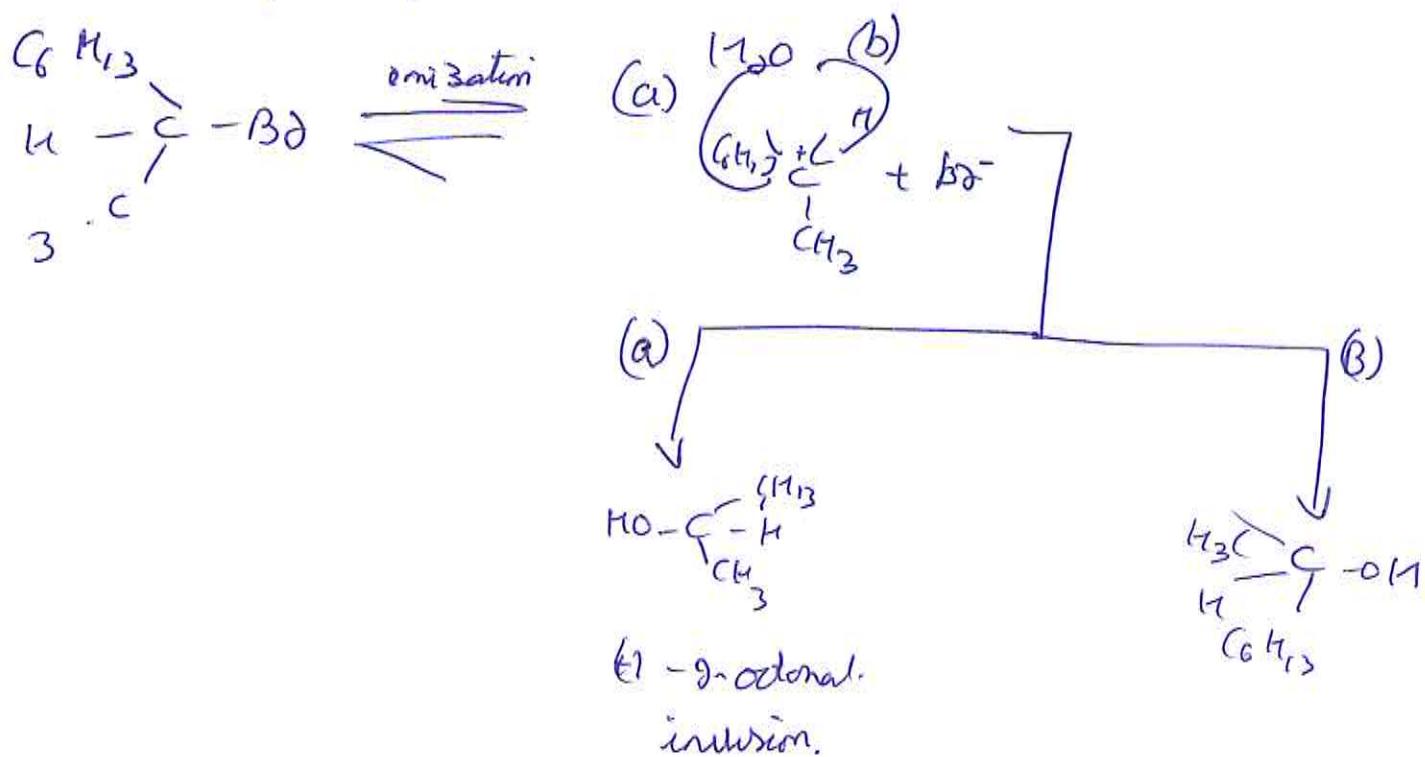
Step-2 :- The Carbocation formed combines rapidly with nucleophile i.e. OH^- , to give tertiary Butyl Alcohol.



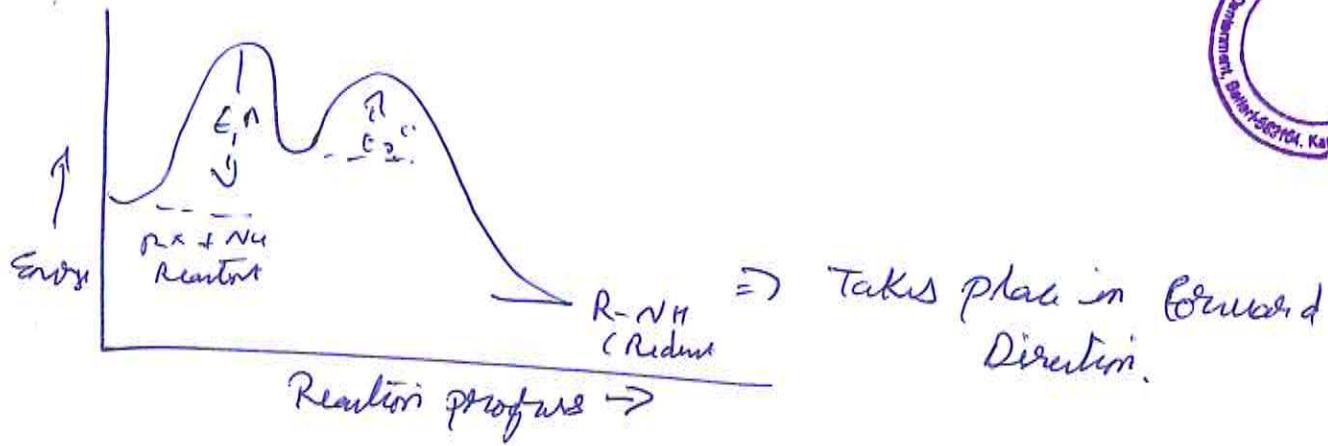
→ Slow step is the first step so, it is determining step in S_{N}^2 Reaction.

Stereochemistry :- The S_{N}^1 Reaction Carbocations are formed on the intermediate which are trigonal and planar. Carbocation has a flat structure so that nucleophile can attack in from either side resulting in formation of two products one with retention of the configuration and another with inversion of configuration.

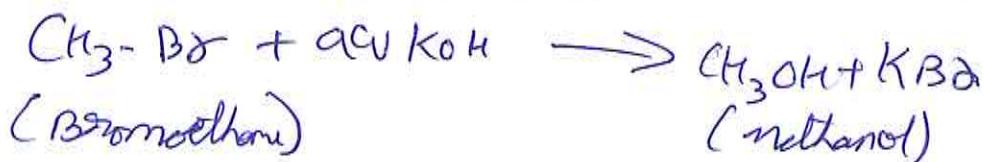
For Example (-)-2-bromooctane is hydrolyzed by S_{N}^1 Reaction, partially Recognized product is formed.



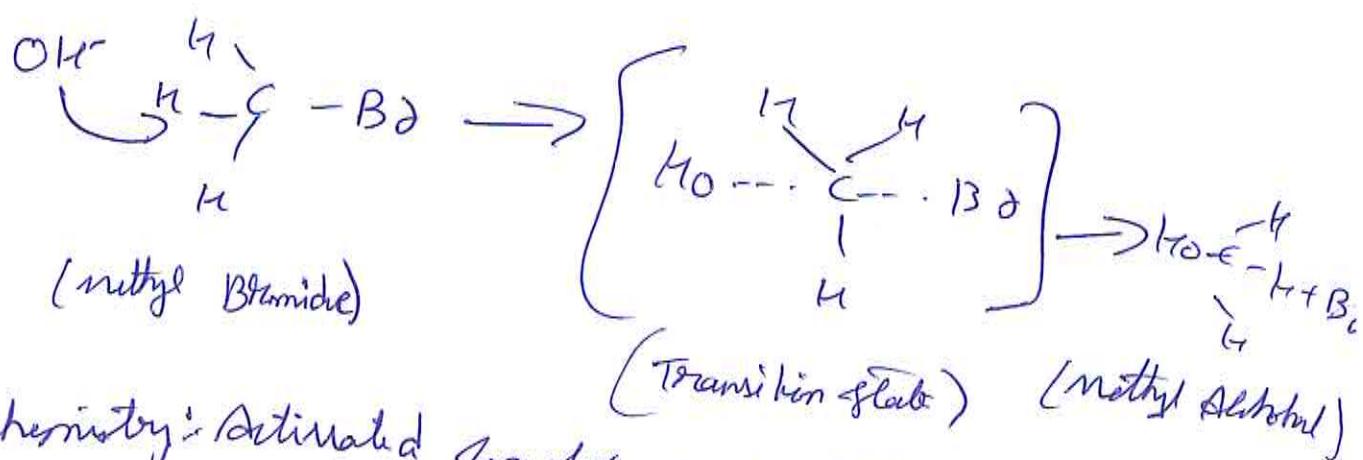
Energy Profile:



S_N^2 Reaction: S_N^2 Reaction is also known as Bimolecular nucleophilic Substitution Reaction. Such Reactions are generally shown by primary haloalkane for ex: hydrolysis of Ethyl Bromide with $AgNO_3$.

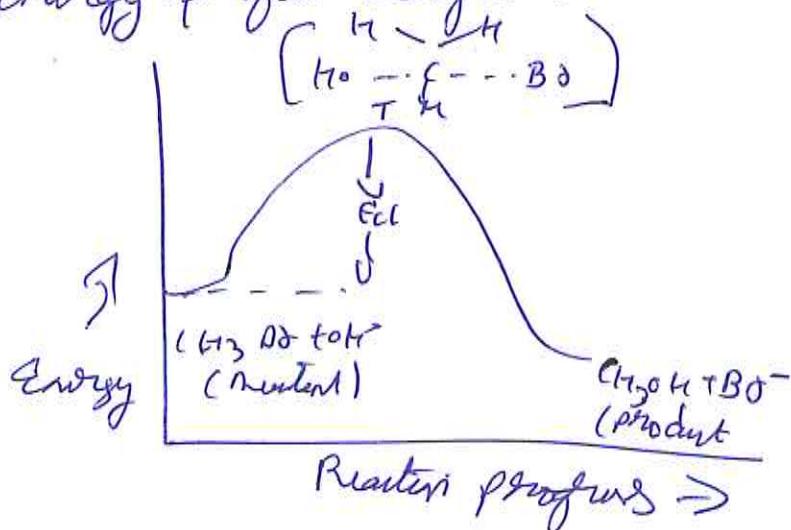


Realtime Kinetics:-



Stereochemistry: Activated (transition state) (Methyl Alcohol)
 having high Energy Content finally, bromine leaves the molecule
 As a Bromide ion And hydroxide ion forms a zwitter bond
 With E₂ elimination Alcohol having "inverted config."

Energy Profile Diagram:



Q) Write a note on Formation of Alkanes?

Ans:- Alkanes are referred to as Saturated hydrocarbons, that is hydrocarbons having all C atoms Bonded to other Carbon Atoms (or) H₂ atoms with Sigma Bonds only. As the Alkanes possess weak Venderwaals forces, the first four members C₁ to C₄ are gaseous C₅ to C₈ are liquid and those containing 18 carbons (or) more are Solids at 298K they are colourless and odourless.

Q) Explain the Relative Reactivity And Stability of Halogens?

Ans:- Reactivity of Halogens:- The Chlorination of Saturated Hydrocarbons can be induced by light, but also can be carried out at temperatures of about 300° in the dark under such conditions except that the chlorine atoms are formed by thermal dissociation of chlorine molecules solid carbon surfaces catalyst is thermal chlorination possibly by adding in the chlorine of the chlorine molecules.

Inorganic Chemistry:



1-Mark Questions:-

Q) What is meant By Successive ionisation enthalpy?

Ans:- The Amount of Energies Required to remove first, second and Subsequent Electrons from the gaseous Atom one after the other are collectively called Successive ionisation enthalpies.

② Distinguish Blw Electron gain Enthalpy & ionization Energy?

Ans: Electron gain Enthalpy

→ The Energy Released When a neutral Atom Accepts An Extra Electron to form the gaseous negative ion i.e) Anion.

Ionization Energy.

→ The minimum amount of Energy required to remove the most loosely Bound Electron (or) Valence Electron of an isolated neutral gaseous Atom.

③ Define Electronegativity?

Ans:- The tendency of an element / atom in a molecule to attract the Shared Pair of Electrons towards itself is known as Electronegativity.

④ What is Screening effect?

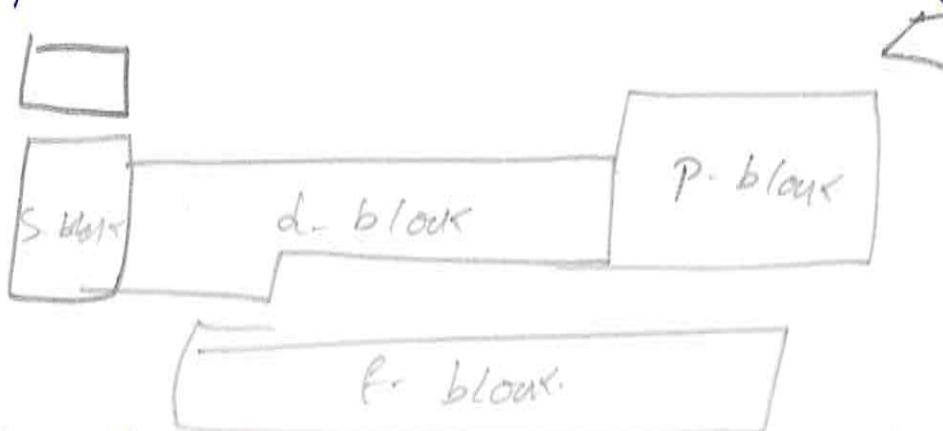
Ans: The phenomenon of the reduction of the force of attraction of the nucleus on the outermost valence electrons due to the presence of the inner shell electrons. This is called As Screening effect or Shielding effect.

5 mark Questions:-

⑤ Discuss the long form of periodic table with respect to S.P.d & f-block Elements?

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As To Simplify the Study of Elements, the periodic table has been divided into four Blocks known as: P. d. f. blocks. The division depends upon the type of orbitals which receives the last Electron in an atom e.g.: magnesium ($1s^2, 2s^2 2p^6 3s^2$) which remains its last Electron in s-orbital belongs to s-block. The division of Periodic table into four blocks is depicted As:



→ S-block Elements:- are those elements whose last Electron enters the S-orbital of the Valence shell. Therefore, Elements of group 1 & group -2 constitute S-block Elements. general Electronic configuration of S-Block Elements is ns^{1-2} .

→ P- Block Elements:- are those elements whose last electrons enter the p-orbitals of the Valence shell. Therefore, Elements of group 13, 14, 15, 16, 17 & 18 constitute P-block. general Electronic configuration of P-block Elements is $ns^2 np^{1-6}$.

→ d- Block Elements:- are those elements whose last electron enters d-orbitals. Therefore Elements of groups 3, 4, 5, 6, 7, 8, 9, 10, 11, & 12 constitute d-block. These elements are called Transition Elements. general Electronic configuration is $(n-1)d^{1-10} ns^{1-2}$

f-block Elements:- are those whose last electron enters the ^{7s} orbital. Two series of elements at the bottom of the Periodic Table known as lanthanoids and actinoids constitute f-block elements. These elements are also known as "Inner-Transition elements" because they constitute electronic configuration within the transition series. General electronic configuration of f-block elements is $(n-2)(f^{1-14})(n-1)d^0-ns^2$.

Q) Define Ionization Enthalpy. Discuss the factors affecting on Ionization Enthalpy?

Ans: The ionization energy of an element is defined as amount of energy required to remove the most loosely bound electron from an isolated gaseous atom.



The experimental values of I.E (Ionization Energy) of elements are determined for their spectra and are reported either in electron Volts (or) in K.cal (or) KJ (1 KJ = 4.184 K.cal). Ionization energy is also known as Ionization potential (or) Ionization enthalpy.

→ Factors affecting ionization enthalpy are as follows:

① Size of the Atom - The larger the atomic size, smaller is the value of ionization enthalpy. In large atom the, the outer electrons are away from the nucleus and thus force of attraction with which they are attracted by nucleus is less and hence can be easily removed.

$$\text{Size of an Atom} \frac{1}{\text{Atomic Size}}$$





- ③ Nuclear charge: As the nuclear charge increases among atoms having same no. of Energy shells the ionization Enthalpy increases. Because force of attraction towards the nucleus increases.
- ④ Screening Effect: It is a phenomenon that occurs when the nucleus reduces its force of attraction on valence electrons due to the presence of inner-shell electrons.
- ⑤ Screening Effect: It is a phenomenon that occurs when the nucleus reduces its force of attraction on valence electrons due to the presence of inner-shell electrons.
- ⑥ Penetration Effect of Electrons: Electrons in the S-orbitals have the maximum probability of being nearer to the nucleus while its probability goes on decreasing in case of P, d, f-electrons. S-Electrons have the greatest penetration towards the nucleus And in order: $S > P > d > f$.
- Thus It would be more for S-electron compared to that of a p-electron which in turn will be greater than d-electron and so on.
- ⑦ Electronic Arrangement: Noble gases have the stable electronic configuration having S^2P^6 arrangements of the outermost shell which all the innermost shells are also complete. The configuration in which all the orbitals of the same subshell are exactly half-filled also represent a very stable arrangement as in case of Nitrogen $\rightarrow 1s^2 2s^2 2p_x^1 2p_y^1 2p_z^1$. The more stable Electronic Arrangement the greater will be the ionization Enthalpy hence. Each noble gas has higher I.E of the elements in the same Period.

7) Write a note on Atomic radius and Explain along the period and down the group?



Ans The term Atomic radius means 't'he distance from the nucleus to the outermost shell of electrons If the Atom is assumed to be spherical, it is the radius of the sphere. However, the absolute size of an atom is difficult to be defined because of the following Reasons:

- 1) According to probability picture of electrons, An Atom does not have well defined Boundary. The probability of finding the electron is not zero even at large distances from nucleus.
- 2) It is not possible to isolate an atom and measure its radius. The probability distribution of an atom is also also affected by the presence of other atoms in the neighbourhood therefore the size of atom may change from one set of environment to another.

Thus, we can only arbitrarily define atomic radius as the effective size which means the distance of closest approach of an atom to another atom in a given bonding situation. Therefore the atomic radii may be called as covalent Radius, van der waals Radius, ionic (or) crystal Radius, etc. depending upon the type of bonding present.

→ Periodic Trends:

1) Variation of Atomic radii in a period: In general, the atomic radii decrease as we move from left to right in a period in the periodic table for example in the second period the atomic radii decreases from lithium to fluorine through Be, B, C, N, and O as given in the table below.

Elements	Li	Be	B	C	N	O	F.
Atomic no.	3	4	5	6	7	8	9
Nuclear charge	+3	+4	+5	+6	+7	+8	+9
Atomic radius	1.23	0.89	0.80	0.77	0.70	0.66	0.64

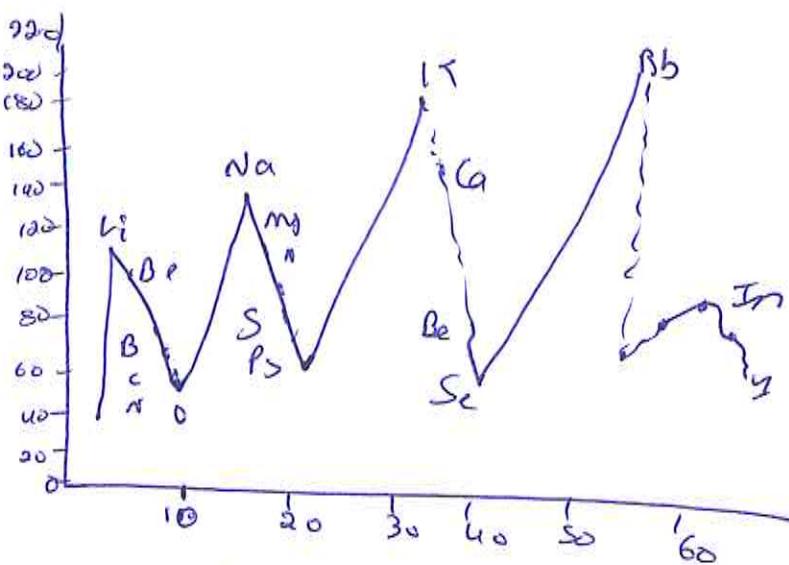


This may be explained on the basis of increasing nuclear charge along a period. With the increase in the atomic no. from lithium to fluorine, the magnitude of nuclear charge increases and the addition of electrons take place in the same orbit. Electrons in the same shell do not screen each other from nucleus. Therefore increase in nuclear charge is not neutralized by the extra electron added. The electrons are pulled closer to the nucleus by the increased effective nuclear charge. Hence we observe a decrease in the size of an atom.

D) Variation of Atomic Radius to a group:

The atomic radius increases from top to bottom in a group. Below table gives the variation of atomic radius of alkali metal group.

Element	Atomic no%	Outermost electron	Atomic radius
Li	3	2s1	1.23
Na	4	3s1	1.57
K	19	4s1	2.03
Rb	37	5s1	2.16
Cs	55	6s1	2.37



Atomic Number (Z) \rightarrow

As we move down the group, the nuclear charge increases and it is expected that atomic size should decrease however we observe the reverse. This happens because the extra electrons that are added go to the next shell. The effect of increase in size is more pronounced than the effect of increased nuclear charge. Consequently the distance of outermost electron from the nucleus gradually increases down the group. In other words atomic size increases as we move down the group.

If we plot atomic radius v/s atomic no. we obtain a graph as shown above. It is evident from the figure that alkali metals occupy the maximum and halogen atoms occupy the minimum in the graph. We can infer that alkali metal is the largest and the halogen is the smallest atom in any period. Noble gases have not been considered in the graph because their radii are corresponding to the van der waals radii.

⑧ Difference b/w ionic radii & covalent radii?



Ans:- The ions are formed as a result of addition (or) subtraction of electrons from the outermost shells of atoms. The ions formed by the loss of electrons acquire +ve charge and are called Cations, while the ions formed by the gain of electrons acquire -ve charge and are called Anions. Ionic radius may be defined as the effective distance from the nucleus of the ion up to which it has an influence in the ionic bond.

The internuclear distance b/w the nuclei (or) Adjacent +ve and -ve ions in a crystal is obtained by X-ray studies (v) Spectroscopic studies of knowing the Radius of one ion, that of the other ions can be calculated.

Size of Cation:- Size of a Cation is smaller than a neutral atom. This is due to the fact that with the Removal of Electrons from an atom the magnitude of nuclear charge as a result the nuclear charge now acts on less no% and are pulled towards the nucleus this causes a decrease in the size of the atom.

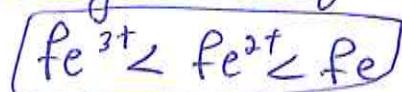
Size of Anion:- Size of the -ve ion (or) Anion is always larger than that of the corresponding atom. The -ve ion is formed by the gain of one (or) more Electrons increases while the magnitude of the nuclear charge remains same. As a result the same nuclear charge acts on large no% of Electrons. In other words, the Electron on large no% of Electrons. In other words, the Electron cloud is held less tightly by the nucleus. This causes an increase in size and thus, Anions are large in size than the corresponding An atoms.

periodic Trends in ionic radius

→ period :- The ionic radius decreases As the nuclear charge increases there is an increase in nuclear charge And therefore the attraction for the same no% of electrons increases. As a result the electrons are pulled more strongly & thus ionic radius decreases.

→ group :- As we go down a group, the ionic radius increase with increase in atomic no%.

Eg : Increasing order of size in case of following.



Torsal Radii :- The Radius of an Atom is calculated by measuring the distance b/w the centres of two atoms (internuclear distances) in molecules with the help of x-ray diffraction (or) Spectral studies. In the case of homonuclear diatomic molecules the atomic radius is equal to one half of the distance b/w the centres of nuclei of two similar atoms bonded together in a molecule.

The Radius is also called "Torsal Radius" because the atoms in a homonuclear diatomic molecule are held together by torsal Radius.

For Example ; the internuclear distance b/w the two atoms in F₂ molecules is 1.28 A° (or) 1.28 pm. Atomic radius of fluorine
= $\frac{128}{2}$ pm = 64 pm

It may be mentioned that 1A° = 100 pm & the atomic radii of chlorine & bromine are 99 pm & 114 pm respectively.

Because the internuclear distances in the CaBr_2 are 228 pm respectively



In case of heteronuclear diatomic molecules (containing different atoms) it has been observed that when the covalent radii of different atoms are added, the resulting value agrees fairly well with the experimentally determined internuclear distance of that molecule.

for Ex: The internuclear distance of KCl molecule can be obtained by covalent radii of K & Cl .

$$r_{\text{KCl}} = r_{(\text{K})} + r_{(\text{Cl})} = 37 + 99 = 136 \text{ pm}$$

In general the atomic radius of an atom B in AB molecule can be calculated by knowing by internuclear distance (r_{AB}) of AB molecule and subtracting the atomic radius of atom A.

$$\text{thus } r_B = r_{\text{AB}} - r_A$$

Periodic Trends in Covalent Radius:-

→ Period: Covalent radius decreases from left to right along a period.

→ Group: Covalent radius increases from top to bottom down the group.

Physical Chemistry :-



1 Mark Questions :-

1) What are mesogens?

Ans:- A compound that displays liquid crystal properties

Mesogens can be described as disordered solids or ordered liquids because they form a unique state of matter called liquid crystalline state which exhibits both solid-like and liquid-like properties called the "mesogens".

2) Write one application of liquid crystals :-

Ans: In the electronic industry the Smectic & Nematic types of liquid crystals have been used in thin light weight display devices such as digital watches and pocket calculators. These are called "liquid crystal display" (LCD's).

3) Write one difference b/w Nematic & Smectic liquid crystal?

Ans:- Nematic L.C

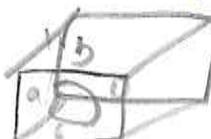
- Nematic liquid crystals show near-normal flow behaviour of liquids.
- They flow more readily.

Smectic L.C.

- The Smectic liquid crystal not flow as normal liquids.
- They have limited mobility.

4) Define unit cell and Crystal lattice?

Ans: Unit cell:- The smallest three dimensional portion of a complete space lattice which when repeated over & over again in different directions produces the complete space lattice is called unit cell.



(unit cell)

Crystal lattice: It is also called as "space lattice". A Space lattice is defined as an array of points showing how ~~molecules~~
Atoms or ions are arranged at different sites in three dimensions
Space.



5 - mark Questions:

Q) Explain the classification of liquid crystals with Examples?

Ans:- Classification of liquid crystals:- Depending upon the detailed molecular structure the system may pass through one (or) more mesophases before it is transformed into the intermediate state may be brought about either by "thermotropic mesomorphism" (i.e by thermal process) (or) By lyotropic mesomorphism (by the intervention of the solvent). → further studies have shown that liquid crystals i.e substance showing mesomorphic state can be classified into two categories: Sematic (Soap like) liquid crystal and Nematic (Thread like). Some substances are capable of existing in both form. A few modifications of these forms are also known.

Sematic liquid crystal: there are types of thermotropic liquid crystals:

- The Sematic liquid crystals do not flow as normal liquids.
- They have limited mobility.
- They flow in layers as if different planes or sheets are gliding over one another.
- The distribution of velocity in different layers is different from that found in true liquids.

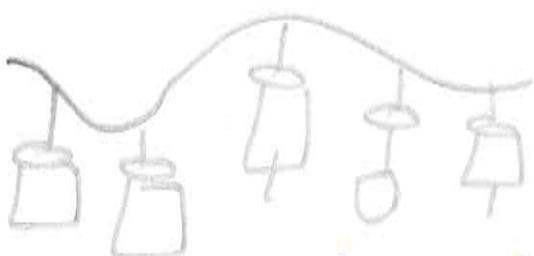
The flow is non-newtonian.

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polymorphic liquid crystals:- This is yet another class of crystals reported recently. The basic monomeric units, of a polymer liquid crystal are low molar mass mesogens, rod like attached to the polymer backbone in the main chain itself (or) as side groups if the repeating unit is rod-shaped. Mesophase to the nematic, cholesteric and smectic types of rod-like molecules and found to be exist.



(a)



Polymorphic liquid crystals:-

Cholesteric liquid crystal:- A cholesteric liquid crystal display is a display containing a liquid crystal with helical str. And which is therefore chiral cholesteric liquid crystals are also known as chiral Nematic liquid crystal. They are organized in layers with no positional ordering but a director axis which varies with layers.
Ex:- Poly α -benzyl-L-glutamate (PBLG) is discane.

Disc-shaped liquid crystal:- In recent years a no% of disc-shaped liquid crystals have also been prepared which exist in more than one mesophase. They can be classified as two categories they are.



Columnar Phase



Nematic phase.

Nematic liquid crystal :- Nematic liquid crystals show near normal flow behaviour of liquids.



- They flow more readily.
- Their flow is also Newtonian and the concept of viscosity is applicable to this flow.
- Their viscosity, however, is rather low as compared to that of liquid.
- This type is regarded less Anisotropic than the Smectic type.
- In polarised light substance in nematic phase appear to have Thread-like structure.
Ex:- p-Azoxy Anisole, & p-Azoxy phenol.

Q) State and Explain law of Symmetry?

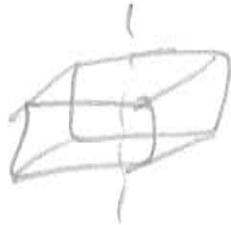
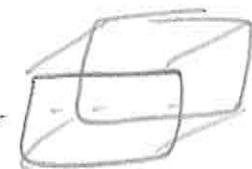
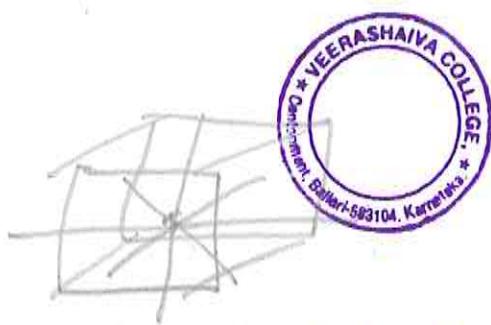
Ans: law of Symmetry & Symmetry Elements :-

Beside the interfacial angle, another important property of crystals is their symmetry. There are various types of symmetry only three of which will be described here. These are (i) Plane of Symmetry
(ii) Axis of Symmetry, (iii) Centre of Symmetry.

Plane of Symmetry: When an imaginary plane can be divide a crystal into two parts such that one is exact mirror image of the other.

Axis of Symmetry: An axis of symmetry is a line about which the crystal may be rotated such that it present the same of the similar appearance more than one during the complete revolution.

Centre of Symmetry: Centre of symmetry of a crystal is such a point that only any line drawn through it intersects the surface of the crystal at equal distance in both the directions.



It may be pointed out that a Crystal may have Any no% of planes (or) Axis of Symmetry but it has only one centre of Symmetry.

Elements of Symmetry of a Crystal :- There are different types of the Symmetries which are possible in a Crystal. The total no% of planes, Axes And Centre of Symmetries of the Crystal is termed As Elements of Symmetry of the Crystal.

Q) State And Explain the law of constancy of interfacial angle in Crystallography?

As:- law of constancy of interfacial angle in Crystallography :-

According to this law, the Angle Blw the Corresponding faces are called interfacial Angles of the Crystal of a particular Substance are Always The Same And independent of the shape And size of the Crystal And this is called law of constancy of the Interfacial Angles.

→ Size of the Crystal :- depends on the rate of Cooling i.e. Bigger Crystals are obtained its cooling is carried out slowly.
→ Similarly Shape of the Crystals of a Substance also depends upon the condition under which the Crystallization takes place i.e. in the Absence (or) presence of any substance.

Substance :-

Nail (Ag) → cubic.

Nail with 5% of CuSO₄ Solution → octahedral.

This instrument used for the measurement of interplanar angles is called a goniometer.

Construction : Simple And common form of a goniometer is contact goniometer is contact goniometer It has two flat notched arms A & B mounted at the centre C of a semicircle scale the crystal is placed b/w the arms A & B such that the adjacent faces of crystals touches them arms are then clamped and the angle b/w the arm is read from the scale.

Note:- Above technique is useful only when the crystal are large in size with clear faces and for more small crystals an optical instrument, x-ray diffraction is used.

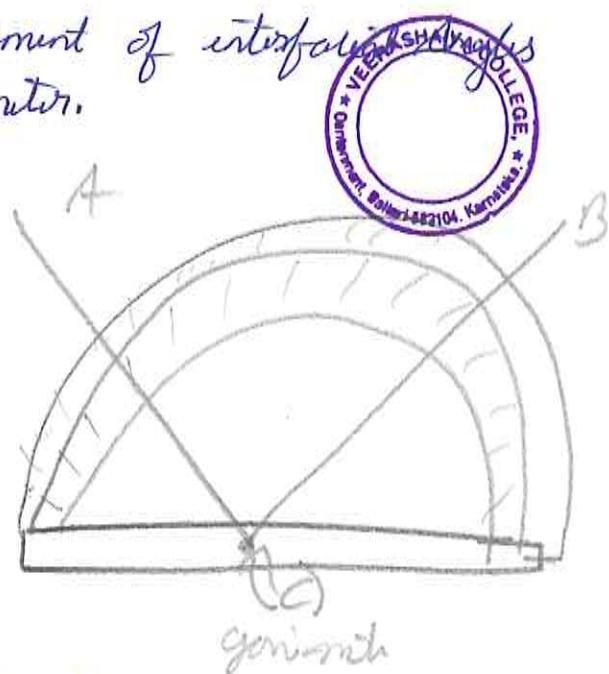
② State And Derive Bragg's Equation?

Ans:- Bragg's law (or) Equation:-

Bragg pointed out that unlike reflection of ordinary light, the reflection of x-rays can place only at certain angles which are determined by the wavelength of x-rays and the distance b/w the planes in the crystal. The fundamental equation which gives a simple relation b/w the wavelength of the x-rays, the interplanar distance in the crystal and angle of reflection is known as Bragg's equation.

Derivation of Bragg's Equation:-

X-ray diffraction is a technique used for structural determination of any crystalline substance. It is based on the concept of "Bragg's law". Suppose a beam of x-rays fall on the crystal at glancing angle θ .



then some of these rays will be reflected from the upper plate

At some angle θ , $\angle xoy = \theta$.

So that $Ao = Bx$ $\angle xoy = \theta$

$Co = Dz$ $\angle zoy = \theta$

Path difference $= xy + yz - ①$.

Path difference is defined as an integral multiple
of wavelength $= n\lambda - ②$

$$n\lambda = xy + yz - ③$$

Consider Δxoy , $\sin \theta = xy/oy$

$$xy = oy \times \sin \theta$$

$$xy = d \sin \theta - ④$$

$$\Delta zoy, \sin \theta = \frac{yz}{oy}$$

$$yz = oy \times \sin \theta$$

Put xy and yz values in eqn ③.

$$n\lambda = d \sin \theta + d \sin \theta$$

$$n\lambda = 2d \sin \theta$$

Therefore, Bragg's equation:

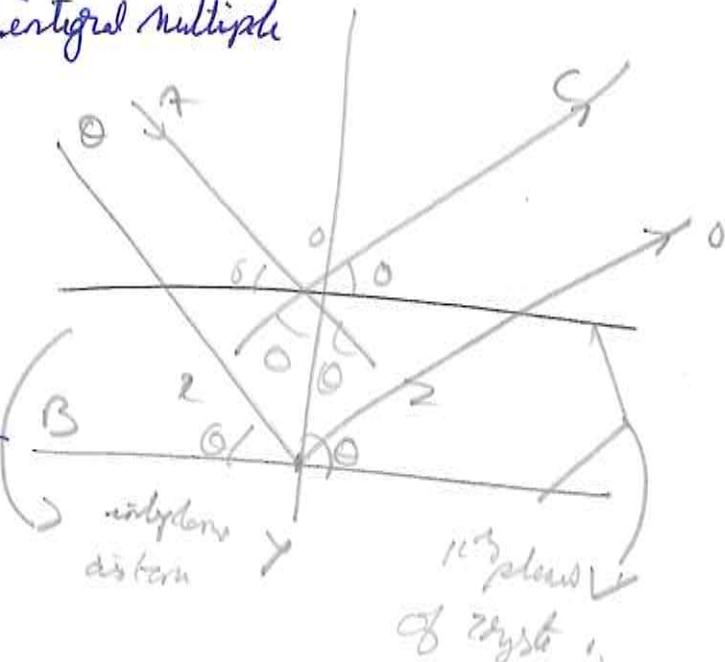
$$\boxed{n\lambda = 2d \sin \theta}$$

where n = order of diffraction.

λ = wavelength.

d = Interplanar distance.

θ = glancing angle.

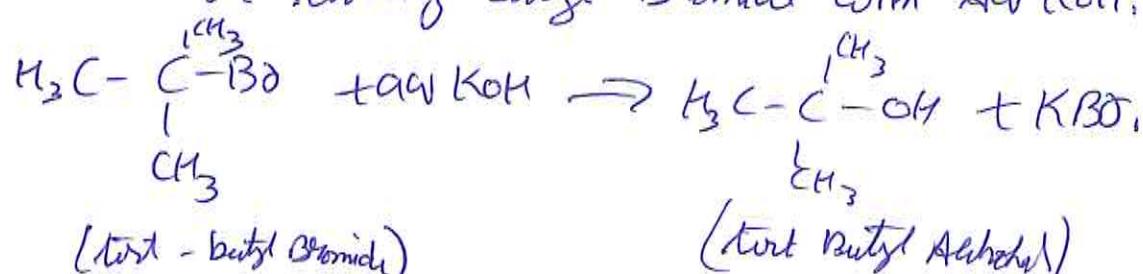


⑥ What are Substitution Reactions? Describe the S.N. and S.N₂ Reaction with stereochemistry, energy profile diagram and mechanism?

As, A Type of Chemical Reaction Where An Atom (or) functional group of a molecule is Replaced by Another Atom (or) functional group this is called As, "Substitution Reaction"



S_N^1 Reaction: S_N^1 Reaction is also known as unimolecular nucleophilic Substitution Reaction. Such Reactions are generally shown by Secondary and Tertiary haloalkanes, for example hydrolysis of tertiary butyl Bromide with Ag_2CO_3 .



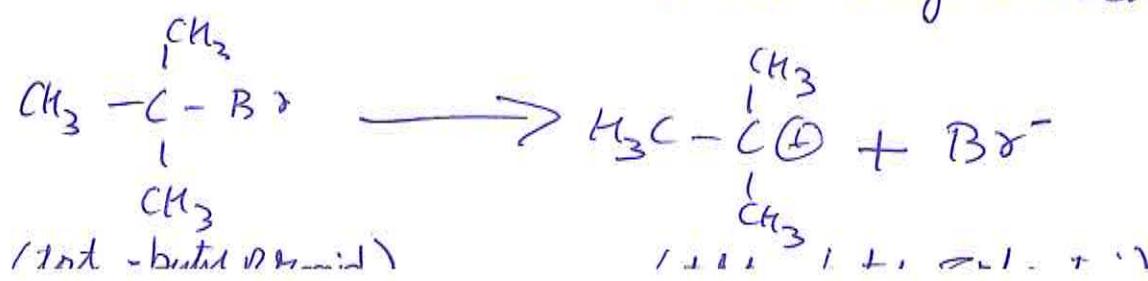
Reaction kinetics: Rate of S_N^1 Reaction depends upon the concentration of Alkyl halide and is independent of the Concentration of nucleophile thus the Reaction follows first order kinetics.

Rate & (alkyl halide)

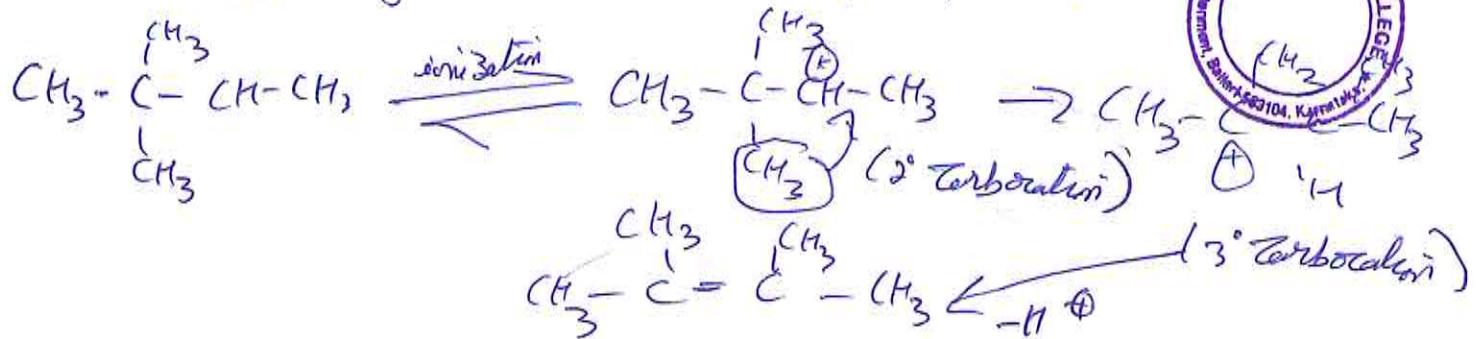
$$\text{Rate} = K \left([(\text{CH}_3)_3\text{C}-\text{Br}] \right)$$

Mechanism:- S_N2 Reaction occurs in two steps

Step 0 = In first step, the Carbon-halogen bond of tertiary Butyl Bromide slowly Breaks Heterolytically to form a intermediate Carbocation i.e) tert-butyl Carbocation.



Examp: Dehydrohalogenation of 3-Chloro-2,2-dimethylbutane yields 2,3-dimethylbut-2-ene as major product.

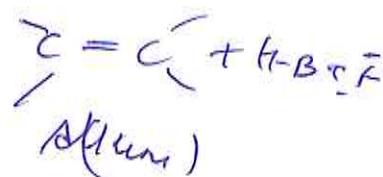
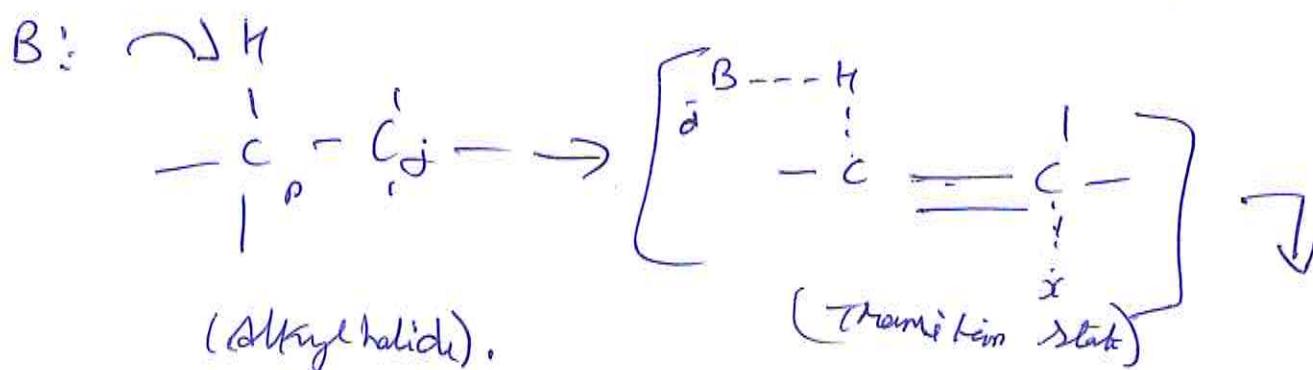


E2 Reaction: It is also an Elimination bimolecular Reaction. This Reaction occurs when An Alkyl Halide is treated with a strong Base Such As hydroxide ion (OH^-) And forms a C-C Bond.



→ E2 Reaction follows "2nd order kinetics".

Mechanism: E2 mechanism is a one-step process. Base Attacks the H atom of β -carbon and begins to remove the α -atom and at the same time as the carbon-carbon= bond starts to form, the β group starts to leave as shown below in transition state. After the transition state, C-H Bond. And C-C Bond are completely broken & C-C = Bond is formed.



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MASTER'S
BACHELOR OF SCIENCE

Roll No. : Reg. No. : P16VB22S221002

INTERNAL ASSESSMENT RECORD BOOK

YEAR 2022 - 2023

Name	: <u>SAI J TERRANI</u>
Class	: <u>M.Sc ZOOLOGY</u>
Semester	: <u>II SEMESTER</u>
Subject	: <u>BIOLOGY OF CHORDATES (PAPER-1)</u>



1/7/23

1st I. A INTERNAL THEORY

I.

1) General characteristics of Hemichordates:

- i) Body is soft, fragile, vermiform & divisible into proboscis, collar & trunk.
- ii) Solitary & colonial, mostly tubicolous, exclusive marine.
- iii) Body wall with a single-layered epidermis.
- iv) Digestive tract is complete in the form of U-shaped tube.
- v) Gill-slots when present, are paired and one to numerous.
- vi) Reproduction mostly sexual. Sexes are separate, (or) united.

General characteristics of Cephalochordates:

- i) They are also known as ascidiates because they do not possess a true brain.
- ii) There are no paired fins found.
- iii) The pharynx has many gill slits that are surrounded by an atrium for protection.
- iv) Small eye-like organs are found in the nerve cord that detect light & its intensity.
- v) For digestion, their mouth is covered with an oral hood that is the entrance for incoming food particles.
- vi) Respiration takes place with the help of gills that possess gill slits.



2) Agnatha

i) Lack true jaws

ii) They have cartilaginous skeleton.

iii) They have pouch-like gill openings.

iv) Lack paired fins.

v) They usually have 2-chambered heart.

vi)

vii) They have notochord.

viii) External fertilization.

ix) Lack true scales.

x) Highly developed olfactory system.

Gnathostomes

i) Possess well-developed jaws.

ii) They have advanced bony skeleton.

iii) They possess gill-slit openings.

iv) They have well-developed paired fins.

v) They have 3-chambered (Cor) 4-chambered heart.

vi) They have vertebral column.

vii) Internal fertilization.

viii) They possess scales for protection.

ix) Not that developed as in Agnatha.

3) Adaptive radiation in bony fishes:

Adaptive radiation of bony fishes occurred in Mesozoic era, around 250 to 65 million years ago.

i) Evolution of jaws: Development of jaws allowed them to be more efficient predators. Jaws provided them with the ability to bite, grasp, and chew.

ii) Bony skeleton: Bony endoskeleton provides them with structural support & flexibility.

iii) Swim bladder: Swim-bladder is an internal gas-filled organ that allows fish to regulate their buoyancy, controlling their position in the water column.

iv) Fins: The evolution of fins contributed to improved maneuverability & stab. lity.

The adaptive radiation of bony fishes resulted in vast array of forms, sizes, & ecological roles within group.

Today bony fishes inhabit virtually every aquatic environment on earth.

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INTERNAL ASSESSMENT RECORD BOOK

YEAR 2022 - 2023

Name :	Sudha patil
Class :	M.Sc II nd Sem
Semester :	II nd Sem
Subject :	Zoology (Biology of chordates) (P-I)

BIOLOGY OF CHORDATES



1) The General Characteristics of Hemichordata
Cephalochordata:

- General characters of protochordata:
- 4 All of them are marine forms.
- 2 They are small & primitive commonly referred to as lower chordates.
- 3 Absence of head, skull or cranium a vertebral column, jaws and brains.
- 4 They are about 2000 species and are widely distributed.

→ General characters of hemichordates:

Introduction: The subphylum hemichordata recently separated from the chordates and included among the non chordates as an independent phylum close to Echinodermata. Hemichordates are the primitive chordates. They consist of worm like animal. They bear half notochord hence they are included under phylum Chordata & Subphylum hemichordata.

General characters:

- 4 Notochord is present lying the anterior of half of the body.
- 2 They are worm like, soft bodied animals and burrowing habit.
- 3 They are solitary or colonial, mostly tubicolous.
- 4 Body is unsegmented, bilaterally, triploblastic organ system of level of organization.



5. The body is differentiated into 3 distinct regions namely,
~~prostomium~~
Collar
and trunk.
6. Digestive system is completed it is straight tube or 'U' shaped tube.
7. Nervous System is embedded in the Epidermis and occurs both on the dorsal and ventral surfaces.
8. Circulatory system is open type including ~~the~~ the dorsal heart.
9. These include the animals which are called as Tongue worms. All are motile. Some are moving and some are sedentary.
10. Respiratory System ^{includes pharyngeal gill} Open type ^{infecting gill slits} and they are filter feeders.
11. Sexes are separate. Fertilization is external in Seawater.
12. Development may be direct or indirect with *Tornaria larva*

ex - *Balanoglossus* (Tongue worm.) *Saccoglossus*



General characteristics of Cephalochordata

- + They are exclusively found in marine water.
- + These are sedentary forms and burrowing in the sand.
- 3+ The notochord is well developed extending from anterior to posterior region of the body. Hence they are referred to as Cephalochordata.
- 4+ Body is fish-like divisible into head, trunk and between tail. Head is absent.
- 5+ Nervous System is well developed having dorsal tubular nerve cord without brain (definite brain is absent).
- 6+ Appendages are absent. Median, dorsal caudal ventral fins are absent.
- 7+ Pharynx is large with numerous gill-clefts. They are filter feeders.
- 8+ Metamerism is well marked, even the gonads are segmented.
- 9+ Circulatory System is closed type without heart and respiratory pigments.
- 10+ Excretion takes place by the protonephridia with solenocytes.
- 11+ Fertilization is external in sea water. Development is indirect.

Ex - Amphioxus (Branchiostoma)

Dollie

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INTERNAL ASSESSMENT RECORD BOOK

YEAR 2022 - 2023

Name : Padma k
Class : MSc Zoology
Semester : IVth Semester
Subject : BIODIVERSITY AND CONSERVATION
[P-I]

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INTERNAL ASSESSMENT RECORD BOOK

YEAR 20 - 20

Name	: <u>Kaiba Thaseen</u>
Class	: <u>MSc Zoology</u>
Semester	: <u>IVth Semester</u>
Subject	: <u>Biodiversity and Conservation (Paper-1)</u>

T



1. The values of Biodiversity :-

Introduction:-

The term Biodiversity was discovered by the "Norman Myers" in 1988, who is British ecologist. "Biodiversity" can be defined a collection of flora & fauna in an given area which are nearly to the extension and which are endemic.

In world there are 36 biodiversity hotspots are discovered and identified among them India is a 2 richest biodiversity with its diverse habitats and varieties of the species.

The values of Biodiversity are follows:-

1) Ecological values:-

It's is the biodiversity value where those species which are present in that area are in the ecosystem where balanced the ecological value the species plays a vital role in the food chain and nutrition among the various tropical lands an energy transformation from one tropical land to other tropical land.

2) Economic values:-

The species plays an important role in the department of fisheries, forestry and in forestry and agricultural sectors. The food,



Medicines that all comes from this economic Sources

3) Genetic values:-

The genes that are present in species plays an important role in passing the characteristics from one species to other and even the resistant upto diseases.

4) Endemism:

They are the species which are found to a particular area we not found anywhere else they are said endemic to that particular area is called endemic species and the process called Endemism.

5) Evolutionary values:-

The species they play an important role in changes that are seen from one generation to other generation in the species due to the evolution in their genes based on the environmental factors that effect them.

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4/07/23

I.A INTERNAL TEST.

4
5

26
30

72

I Answer the following:

Ques. The values of biodiversity.



Biodiversity is defined varieties of flora and fauna found in the ecosystem which life present on the earth.

It refers to the diversity in all species such as plant, animal and microorganism.

Biodiversity serves a dual purpose in providing ecological function biodiversity help living beings procure food, fuel, fibre and other extractable commodities. Biodiversity is vital for the ecosystem because it provides regulatory, cultural and sustaining function.

The values of biodiversity.

- 1) Ecosystem value
- 2) Economic value
- 3) Consumptive use value
- 4) Productive use value
- 5) Ethical and Moral value
- 6) Aesthetic value



1) Ecosystem value:

The environmental values of biodiversity can be evaluated by analyzing the function of the ecosystem.

Ecosystem services such as intensive agriculture meet human needs and activities. This include the establishment and maintenance of fertile soil, retention of fresh ground water resources.

2) Economic value:

Biodiversity has a tremendous economic perspective on food, livestock feed, Medicative, ethical and social ideals. Biodiversity is an important resource for many industry sector the world economy.

3) Consumptive use value:

This refers to natural product that are used for food such as livestock feed, wood Product, fuelwood and other purpose, human consume 10,000 flora and fauna species daily.

4) Productive use value:

This implies Product that are sourced and commercially marketed. Almost all of the crops grown today