

Class 12 History (Friday class)

Decolonisation in Asia & Africa

Chiang carried out five expeditions against the communists & at that time Mao Zedong had been the leader of the communist group. Being chased by the KMT party the communists took shelter in the hilly areas & focussed on building the Red Army. Very soon the KMT army surrounded the communists & Mao realised that the only scope of survival was to break through the KMT's defence. With this in mind he started the famous Long March & this march proved to be a brilliant Communist propaganda. It is to be noted when Japan attacked China both the parties worked together to defend China against Japanese attack but after World War 2 the two parties again came at loggerheads. In this continuous struggle the Communists won & proclaimed China as Republic. Mao became the Chairman of the Republic. It is to be noted that there had been many causes behind the communist party victory like:

The KMT Party was corrupted & there had been widespread bribery among officials & they depended more on the support of the rich people. Whereas the communists were much more disciplined & with their sincerity had won the hearts of the people & they wanted to setup a clean government.

Questions (Long):

- a) State the importance of Long March.
- b) Elucidate the reasons behind Communist Victory.

Business studies for class 12

Ch-4 staff selection

Answer the following questions after listening to the explanation:

Q1: What is selection?

Q2: Why a selection process is important for an organization?

Q3: What are the steps involved in the selection process?

Q4: What is an attitude test?

Q5: What is a personality test and how does a personality test important for an organization?

Commerce for class 12

Ch-1 Business Environment:

Answer the following questions after listening to the explanation given below:

Q1: What is a business environment?

Q2: What is the importance of business environment?

Q3 :What are the features of business environment?

Q4: What are the micro business environment?

Q5: What are the macro business environment?

DREAMLAND SCHOOL
BIOLOGY - CLASS 12 (2020 -2021)
ASSIGNMENT

DATE – 24/04/2020

CHAPTER – HUMAN REPRODUCTION

EXPLANATION

- Reproduction is the process by which organisms produce new individuals. It is of 2 types- asexual & sexual
- Asexual reproduction is production of offspring by a single parent without formation of gametes. It is of following types – binary fission, multiple fission, budding, fragmentation, regeneration.
- Sexual reproduction is production of offspring involving fusion of 2 gametes- male & female.
- It of basically 2 types-
 - a) **Amphigony** – fusion of 2 gametes from same or different parent to form zygote. It is of two types – syngamy & conjugation
 - A. **Syngamy**- fusion of two gametes.
Depending on source of gametes it is of 2 types –
 - 1) **Endogamy** – fusion of 2 gametes of same parent
 - 2) **Exogamy** – fusion of 2 gametes of different parentsDepending on nature & structure of gametes-
 - 1) **Isogamy** – gametes are morphologically identical.
 - 2) **Anisogamy** – gametes differ in form, size, structure & behavior.There are two special forms –
 - 1) **Neoteny** – involves the development of gonads & sexual reproduction in the larval stage.
 - 2) **Polyembryony**- blastomeres formed by the division of zygote separate in early stage of development & produce complete individual independently.
 - B. **Conjugation** – temporary pairing of two parents to exchange their male pronuclei
 - b) **Parthenogenesis** – egg develops into offspring without fertilization.

MALE REPRODUCTIVE SYSTEM

The male reproductive system consists of the testes and a series of ducts and glands.

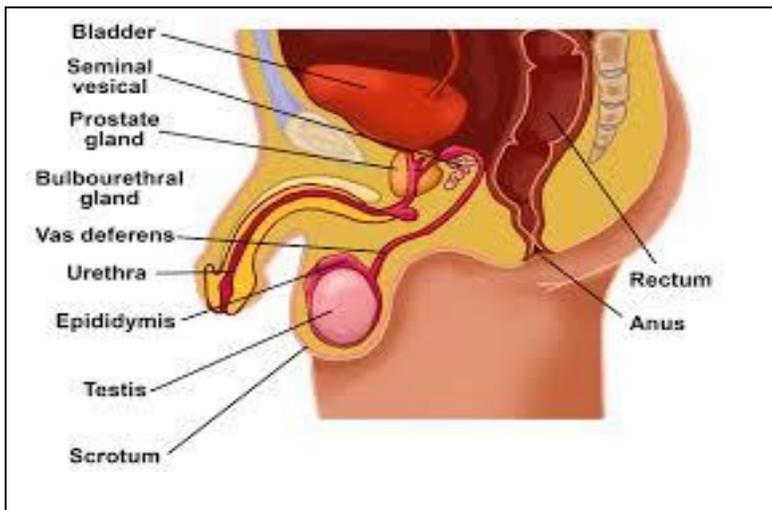
Structure

1. SCROTUM

The two testicles are each held in fleshy sac called the scrotum. The major function of the scrotal sac is to keep the testes cooler than thirty-seven degrees Celsius which is below normal body temperature. Temperature has to be lower than normal in order for spermatogenesis (sperm production) to take place.

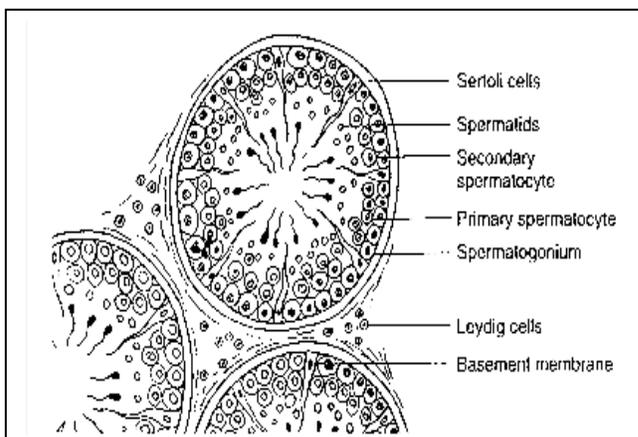
2. TESTES

- The testes (singular, testis) are located in the scrotum (a sac of skin between the upper thighs).
- In the male fetus, the testes develop near the kidneys, then descend into the scrotum just before birth. Each testis is about 1 1/2 inches long by 1 inch wide.
- Testosterone is produced in the testes which stimulates the production of sperm as well as gives secondary sex characteristics beginning at puberty.
- Each testis is covered by a white fibrous capsule, the tunica albuginea. The tunica albuginea is covered by a peritoneal layer – tunica vaginalis & supplied by a network of blood capillaries – tunica vasculosa.
- The two testicles are each held in a fleshy sac called the scrotum. The major function of the scrotal sac is to keep the testes cooler than thirty-seven degrees Celsius which is below normal body temperature. Temperature has to be lower than normal in order for spermatogenesis (sperm production) to take place.
- Each testis contains over 100 yards of tightly packed **seminiferous tubules**.
- Around 90% of the weight of each testis consists of seminiferous tubules. **The seminiferous tubules are the functional units of the testis, where spermatogenesis takes place.**
- Once the sperm are produced, they move from the seminiferous tubules into the **rete testis** for further maturation.



Male reproductive system

L.S OF TESTIS



INTERSTITIAL CELLS (CELLS OF LEYDIG)

In between the seminiferous tubules within the testes, are interstitial cells, or, Cells of Leydig. **They are responsible for secreting the male sex hormones (i.e., testosterone).**

SERTOLI CELLS

- A Sertoli cell (a kind of sustentacular cell) is a 'nurse' cell of the testes which is part of a seminiferous tubule.
- It is activated by follicle-stimulating hormone, and has FSH-receptor on its membranes.
- Its main function is to nurture the developing sperm cells through the stages of spermatogenesis. Because of this, it
- has also been called the "mother cell." It provides both secretory and structural support.

The testes receive blood through the testicular arteries (gonadal artery). Venous blood is drained by the testicular veins. The right testicular vein drains directly into the inferior vena cava. The left testicular vein drains into the left renal vein.

3. EFFERENT DUCTULES

The sperm are transported out of the testis and into the epididymis through a series of efferent ductules.

a) EPIDIDYMIS

- The seminiferous tubules join together to become the epididymis. The epididymis is a tube that is about 20 feet long that is coiled on the posterior surface of each testis. Within the epididymis the sperm complete their maturation and their flagella become functional. This is also a site to store sperm until the next ejaculation.
- Smooth muscle in the wall of the epididymis propels the sperm into the ductus deferens.
- **Vasa efferentia** from the rete testis open into the epididymis which is a highly coiled tubule.
- The epididymis has three parts- 1)head or caput epididymis- it is the proximal part of the epididymis. It carries the sperms from the testis. 2)body or corpus epididymis- it the highly convoluted middle part of the epididymis 3)tail or cauda epididymis- it is the last part that takes part in carrying the sperms to the vas deferens.
- Epididymis keeps sperms for sometimes, gives nourishment to it. The cauda epididymis continues to form less convoluted vas deferens.

b) DUCTUS DEFERENS /VAS DEFERENS

- The ductus (vas) deferens, also called sperm duct, or, spermatic deferens, extends from the epididymis in the scrotum on its own side into the abdominal cavity through the **inguinal canal**.
- **The inguinal canal** is an opening in the abdominal wall for the spermatic cord (a connective tissue sheath that contains the ductus deferens, testicular blood vessels, and nerves. The smooth muscle layer of the ductus deferens contracts in waves of peristalsis during ejaculation.

c) EJACULATORY DUCTS

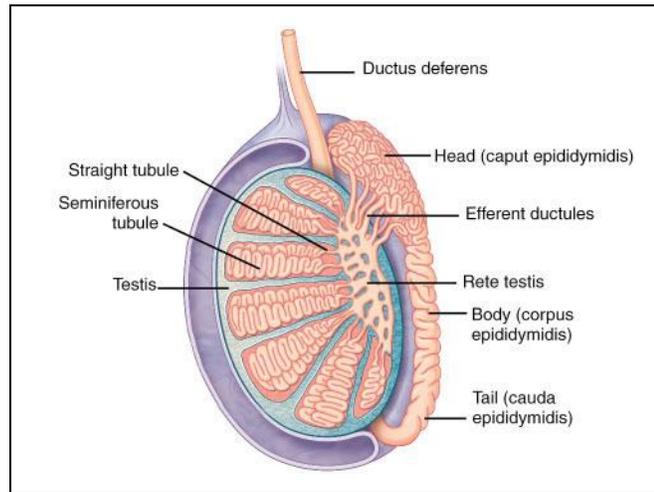
There are two ejaculatory ducts. Each receives sperm from the ductus deferens and the secretions of the seminal vesicle on its own side. Both ejaculatory ducts empty into the single urethra.

- #### d) URETHRA
- urethra, which is the last part of the urinary tract, traverses the corpus spongiosum and its opening, known as the meatus, lies on the tip of the glans penis. It is both a passage for urine and for the ejaculation of semen.

4. PENIS

- The penis is an external genital organ.

- The distal end of the penis is called the glans penis and is covered with a fold of skin called the prepuce or foreskin. Within the penis are masses of erectile tissue.



5. ACCESSORY SEX GLANDS

a. SEMINAL VESICLES

The pair of seminal vesicles are posterior to the urinary bladder. They secrete fructose to provide an energy source for sperm and alkalinity to enhance sperm mobility. The duct of each seminal vesicle joins the ductus deferens on that side to form the ejaculatory duct.

b. PROSTATE GLAND

The prostate gland is a muscular gland that surrounds the first inch of the urethra as it emerges from the bladder. The smooth muscle of the prostate gland contracts during ejaculation to contribute to the expulsion of semen from the urethra.

c. BULBOURETHRAL GLANDS

The bulbourethral glands also called Cowper's glands are located below the prostate gland and empty into the urethra. The alkalinity of seminal fluid helps neutralize the acidic vaginal pH and permits sperm mobility in what might otherwise be an unfavorable environment.

SEMEN

Semen is a fluid mixture of sperm and secretions of the accessory sex glands. It has following functions

- Provides a fluid medium for the transmission of sperms into the vagina of females
- Nourishes & activate the sperms
- Neutralizes the acidity of the urine in the urethra of male & vagina of female
- Lubricates the female reproductive tract at the time of mating.

GAMETOGENESIS

The process of formation of haploid gametes from diploid germ cells in the gonads for sexual reproduction is called gametogenesis. It is of 2 types – spermatogenesis & oogenesis.

SPERMATOGENESIS

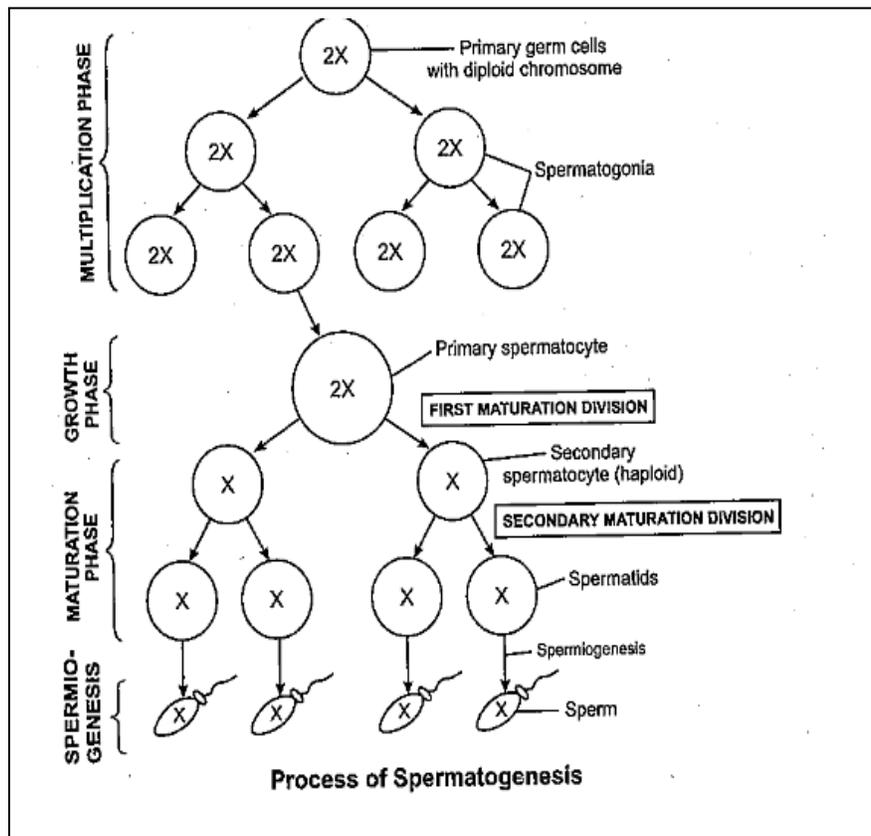
The process of formation of sperms is called spermatogenesis. It occurs in the male gonads testis. Testes are made up of many seminiferous tubules lined by germinal epithelium. Cells of this layer divide to form spermatozoa in the following steps:

(1) Multiplication Phase: At maturity, the primordial germ cells divide by mitosis to produce a large number of spermatogonia. Type A spermatogonia is the stem cells which divide to form spermatogonia. Type B spermatogonia are the precursors of sperms.

(2) Growth Phase: Type B spermatogonium actively grows to a primary spermatocyte. It obtains nourishment from the nursing cells.

(3) Maturation Phase: Each primary spermatocyte undergoes two maturation divisions. The first maturation division is reductional and forms two haploid daughter cells called secondary spermatocytes. Both secondary spermatocytes then undergo second maturation division to form four haploid spermatids.

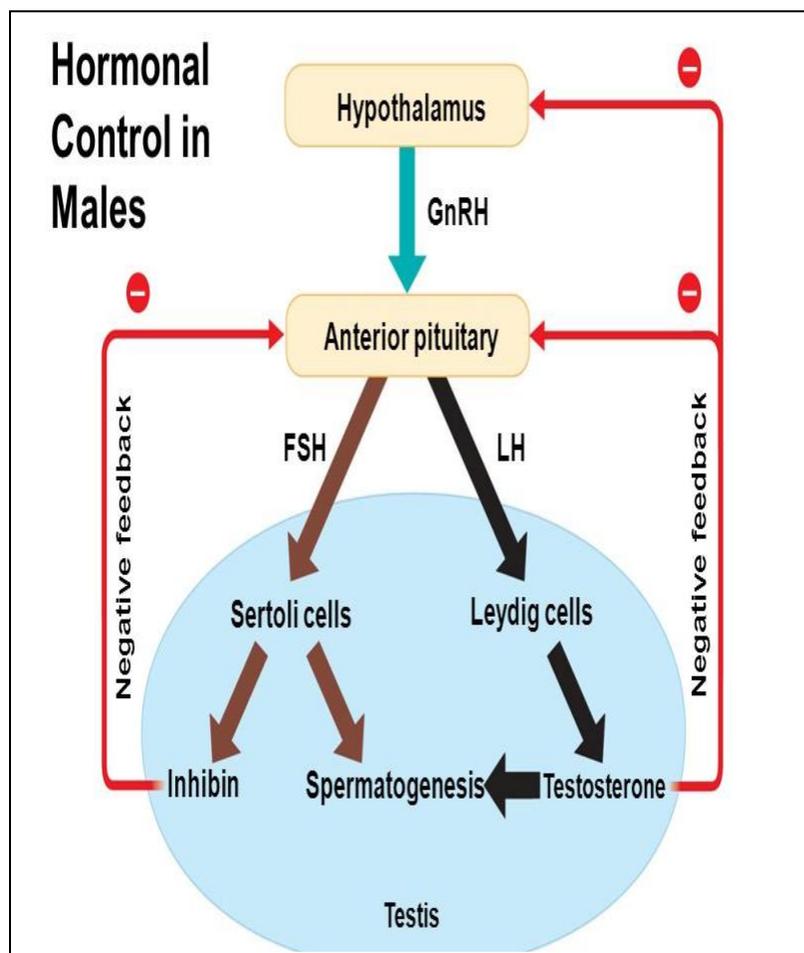
(4) Spermiogenesis: It is the process of transformation of spermatid to a spermatozoan. The spermatozoa are then known as sperms. The four spermatid becomes the head of the sperm, the Golgi apparatus, containing proteolytic enzymes, becomes the acrosome cap.



HORMONE REGULATION

Hormones which control reproduction in males are:

- 1) Gonadotropin-Releasing Hormone (GnRH):
 - The hypothalamus secretes this hormone into the pituitary gland in the brain.
 - There are two gonadotropic hormones, FSH and LH.
- 2) Luteinizing Hormone (LH):
 - The pituitary gland secretes this hormone after receiving a GnRH signal from the hypothalamus.
 - LH stimulates Leydig cells, in the testes, telling them to produce testosterone.
- 3) Follicle-Stimulating Hormone (FSH):
 - The pituitary gland also secretes this hormone.
 - Testosterone helps FSH run through the bloodstream to make Sertoli cells, located in the seminiferous tubules of the testes, to make immature sperm to mature sperm.



STRUCTURE OF SPERM

It has 4 parts –

1) Head –

- Has a cap like structure called acrosome formed from the golgi complex & helps the spermatozoa to penetrate through the egg membranes & enter the egg cytoplasm. It secretes tissue dissolving enzymes to facilitate the process
- Has sperm nucleus which contains densely packed DNA & proteins. Its posterior margin is depressed to accommodate the proximal centriole

2) Neck –

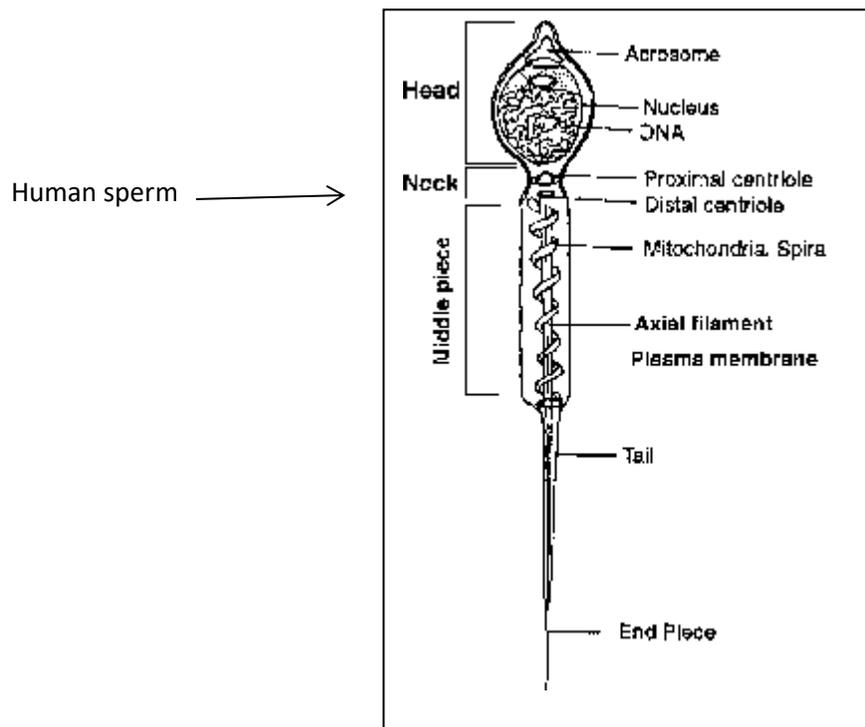
- The head is followed by short neck
- Consist of proximal & distal centriole
- Introduced into the egg at the time of fertilization along with sperm nucleus
- The distal centriole lies posterior to the proximal centriole & acts as a proximal granule. It provides attachment to the axial filament of the sperm tail.

3) Middle piece-

- Consist of apical part of axial filament surrounded by tightly coiled spiral sheath of elongated mitochondria.
- Mitochondria contain oxidative enzyme & provide energy for sperm motility

4) Tail-

- Consist of central axial filament , thin layer of cytoplasm & an outer smooth plasma membrane
- The axial filament is formed of nine pairs of longitudinal fibres.



ASSIGNMENT 2

- 1) What are inguinal canals?
- 2) Where are Leydig cells located? What do they secrete?
- 3) Explain the process of spermatogenesis with a neat labelled diagram.
- 4) Name the hormone responsible for the descent of testes into the scrotum. Why does failure of this result in sterility?
- 5) Explain the structure of epididymis and state its function.

(** you will mark the assignment of reproduction in flowering plant as assignment 1 and both the assignment 1 & 2 to be done in biology copy 1)

MOUMITA GANGULY

Sociology

Date – 24.04.2020

Class – XII

Social Institutions

Marriage Meaning, Definition & Functions of Marriage

Meaning of Marriage

Marriage in the real sense is the acceptance of a new status with a new set of obligations recognized by other people. Wedding ceremonies are held for the tie of marriage. Marriage is a socially recognized universal institution which is found in every society. It is a social contract of two opposite sexes for the satisfaction of physical, biological, social, psychological and spiritual needs of males and females. It leads to the formation of family and the procreation of children. Sexual relationship and production of children are the basic aim of marriage. It is a Latin word which means the connection of two opposite human sexes for the satisfaction of basic needs.

Definitions of Marriage

Following are some important definitions of marriage.

1. **According to Westermarck** “It is a relation of one or more men with one or more women recognized by the law and custom having some rights and duties in case of having children”.
2. **Horton and Hunt says** “It is social system in which two or more than two persons establish a family”.
3. **According to Mr. Muhammad Niaz**, “It is a union of husband and wife approved by the following four agencies i.e. Religion, society, morality, law”.
4. **Mack & Young says** “Marriage is an institution or a set of norms which determines a particular relation between parents and to their children”.

In simple words marriage is an institution which ties of husband and wife to fulfill their desired needs like sex satisfaction to bring children and fulfill social and psychological needs of both male and female.

Functions of Marriage

Following are the important functions of marriage.

1. Procreation of children
2. Sex regulation
3. Children socialization
4. Provide legal parents to children
5. Give economic security to women
6. Provide social security to women
7. Increase man power
8. Establishes joint fund
9. Fulfillment of basic needs
10. Perpetuation of the lineage

Different Types of Marriages

Polygamy

Polygamy is a type of marriage in which men can marry more than one women at the same time. Polygamy still exist in many country especially in Muslim countries. The laws of majority Muslim states is based on religion or Law of Allah. Taking more than one wife is considered normative behavior in Muslim countries. However, in other countries polygamy is considered as unlawful and unethical practice. Polygamy are further divided into two types, which are as follow, sororal polygamy, non sororal polygamy and polyandry.

Sororal Polygamy

The word sororal is derived from Latin word “soror” which means sisters. When a man is married with two sisters simultaneously is called sororal polygamy.

Non Sororal Polygamy

Non sororal polygamy is a type of polygamy in which a man is married to more than one women but the wives are not blood related or sisters.

Polyandry

polyandry is a type of polygamy in which one woman is married to more than one man. This type of marriage is still practiced in some African and Indian tribes. Polyandry is further divided into two types, which are as follow, fraternal and non-fraternal polyandry.

Fraternal Polyandry

Fraternal polyandry is a type of polyandry in which two or more than two brothers take a single woman as their common wife. This type of marriage is still practiced by the tribe of India namely Todas tribe.

Non Fraternal Polyandry

In non-fraternal polyandry multiple men take one woman as their common wife however, in this type these men or husbands of a woman are not related with one another. Moreover, it's up to woman, which ever husband she chooses to live with.

Exogamy

It is also called **out-marriage**, custom enjoining marriage outside one's own group. In some cases, the rules of exogamy may also specify the outside group into which an individual must marry. The severity of enforcement of exogamous restrictions varies greatly across cultures and may range from death to mild disapproval.

Exogamy is usually defined through kinship rather than ethnicity, religion, or class. It is most common among groups that reckon descent through either the father (patrilineality) or the mother (matrilineality) alone.

Such lineages may in turn be grouped into clans or moieties. These are most often the locus of exogamy; marrying a member of one's own clan or moiety typically constitutes a form of incest.

Exogamy does not guarantee that spouses have no genetic relationship. Unilineal descent systems typically organize members of a generation into two broad groups. Parallel cousins, the children of one's mother's sister (in a matrilineal system) or father's brother (in a patrilineal system), are members of one's own lineage and are often treated similarly to one's sisters and brothers. Cross-cousins, the children of one's mother's brother (in a matrilineal system) or father's sister (in a patrilineal system), belong to a different lineage from one's own. In many exogamous cultures, cross-cousins are viewed as ideal marriage partners.

Home Work –

1. What is marriage?
2. Define Exogamy.
3. Define Polygamy.
4. Define Polyandry.
5. Mention any 5 functions of marriage.

DREAMLAND SCHOOL
CLASS XII (session 2020-21)
PSYCHOLOGY HOME WORK-3A

Chapter 2:Personality

Quick review of the content

- **Personality** refers to individual differences in characteristic patterns of thinking, feeling and behaving. The study of personality focuses on two broad areas: One is understanding individual differences in particular personality characteristics, such as sociability or irritability. The other is understanding how the various parts of a person come together as a

Concepts

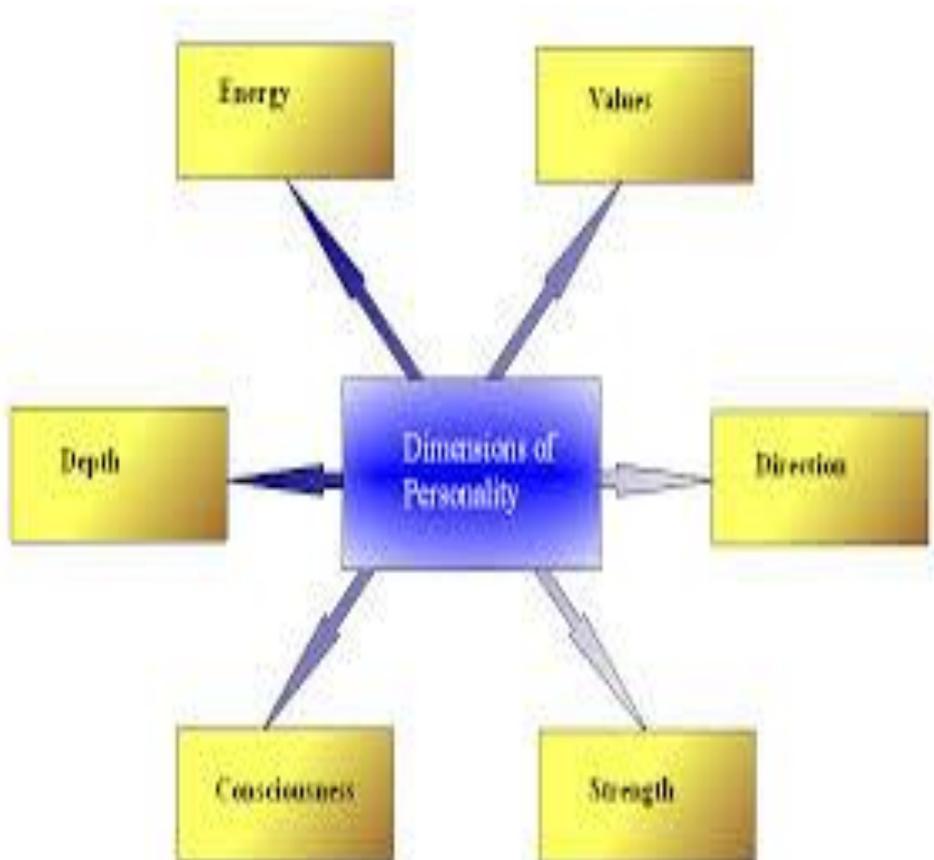
- The word **personality** comes from the Latin root **persona**, meaning "mask." According to this root, **personality is the impression we make on others; the mask we present to the world.**
- **Personality is defined as "a unique set of traits and characteristics, relatively stable over time."** The definition further suggests that **personality does not change from day to day. Over the short-term, our personalities are relatively set or stable. However, definition does not suggest that personality is somehow rigid, unchangeable, and cast in concrete. Definition recognizes that, over a longer term, personality may change.**

- The word **personality** is highly associated with the word "self".
- **Self and Personality** –can be referred as the characteristics in which we define our existence.
- These characteristics are usually acquired from our experiences and they show up in our behaviour.
- These characteristics make people different from each other. Hence they behave differently in similar situations.
- Also same people behave almost similarly in different situations.

- Hence it is safe to say that **Different people have different personalities in different situations.**



- **Definitions of Personality-**



- **Raymond Cattell defined personality** as " That which permits a prediction of what a person will do in a given situation." Source Traits are the underlying basic factors of an individuals
- "Personality is the dynamic organization within the individual of those psychophysical systems that determine his characteristics behavior and thought" **(G.W Allport, 1961, p. 28).**

According to Allport , following can be said for personality

Characteristics

- **Personality is an internal process that guides behaviour.**
- **Gordon Allport (1961) makes the point that personality is psychophysical, which means both physical and psychological.**
- **Biological and genetic phenomena do have an impact on personality.**
- **Child (1968) makes the point that personality is stable – or at least relatively stable.**
- **Child (1968) includes consistency (within an individual) and difference (between individuals) in his definition,**
- **Allport (1961) refers to characteristic patterns of behavior within an individual.**

- **Hans Eysenck** was a **personality** theorist who focused on temperament—innate, genetically based **personality** differences. He believed **personality** is largely governed by biology, and he viewed people as having two specific **personality** dimensions: extroversion vs. introversion and neuroticism vs. stability.

Personality Terms

- **Personality:** a person's internally based characteristic way of acting and thinking.
- **Character:** Personal characteristics that have been judged or evaluated
- **Temperament:** Hereditary aspects of personality, including sensitivity, moods, irritability, and distractibility
- **Personality Trait:** Stable qualities that a person shows in most situations
- **Personality Type:** People who have several traits in common

THEORIES OF PERSONALITY

Type Theories: This approach attempts to comprehend and segregate people into groups by examining and based on their **broad patterns in** observed **behaviours**.

So each pattern type refers to a group of people who have similarity of their behavioural characteristics that match with the pattern that set denotes.

Greek physician Hippocrates had proposed a typology of personality based on fluid/humour: Sanguine, Phlegmatic, melancholic, choleric.

Charak Samhita famous treatise on Ayurveda classifies as- *Vata, pitta* and *kapha* based on 3 humoural elements- *Tridosha*

Typology of personality based on *trigunas*:

Sattva- Cleanliness, Truthfulness, dutifulness, detachment and discipline.

Rajas- Intensive activity, desire for sense gratification, dissatisfaction, envy.

Tamas- Anger, arrogance, depression, laziness, feeling of helplessness.

Assignment Questions

- 1 Define personality according to Allport.
2. Write role Eyesenck in psychology.
- 3.What is the relation between self and personality.

24.04.2020

CLASS-XII

SUBJECT-PHYSICS

CHAPTER-1: ELECTRIC CHARGES AND FIELDS

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

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

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

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

When $r \gg l$,

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

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

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

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

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

When $r \gg l$,

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

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

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

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

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

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

24.04.2020
CLASS-XII
SUBJECT-PHYSICS
ASSIGNMENT-6
CHAPTER-1: ELECTRIC CHARGES AND FIELDS
(F.M.-10)

Answer the following questions

(Question No-1 carries 1 mark, 2 carries 2 marks, 3 carries 3 marks, 4 carries 4 marks)

1. What is electric dipole?
2. Write the expression of electric field intensity at a point on the axis of a dipole. How the expression will change if the point of the test charge is at very large compared to the length between the two charges on the dipole?
3. Write down the properties of the electric lines of force?
4. (i) Write down the expression of torque on a dipole in a uniform electric field.
(ii) Write down the condition when the torque becomes maximum and minimum.
(iii) From the equation of torque define the term electric dipole moment.

Sudeb Chatterjee

CLASS - 12
COMPUTER SCIENCE
BOOLEAN ALGEBRA (KARNAUGH MAPS)

Continuation.....

KARNAUGH MAPS:

we have simplified the Boolean functions using Boolean postulates and theorems. It is a time consuming process and we have to re-write the simplified expressions after each step. To overcome this difficulty, **Karnaugh** introduced a method for simplification of Boolean functions in an easy way. This method is known as Karnaugh map method or K-map method.

A Karnaugh map is a graphical form of a truth table and consists of a square or rectangular array of adjacent cells or blocks. The number of cells in a particular map depends on the number of variables in the Boolean expression to be minimized. The number of cells for a particular map is determined from expression

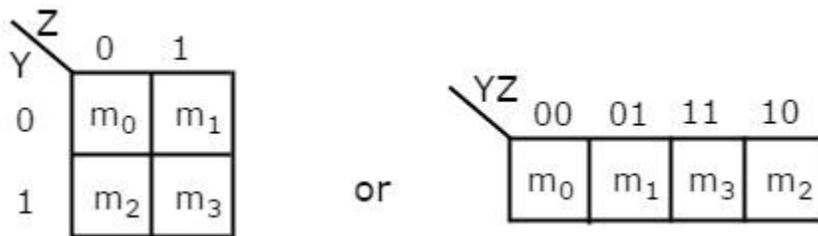
$$N = 2^n$$

Where N = number of cells required for the Karnaugh map.

n = number of variables in the Boolean expression.

2 Variable K-Map

The number of cells in 2 variable K-map is four, since the number of variables is two. The following figure shows **2 variable K-Map**.



- There is only one possibility of grouping 4 adjacent min terms.
- The possible combinations of grouping 2 adjacent min terms are $\{(m_0, m_1), (m_2, m_3), (m_0, m_2) \text{ and } (m_1, m_3)\}$.

3 Variable K-Map

The number of cells in 3 variable K-map is eight, since the number of variables is three. The following figure shows **3 variable K-Map**.

		YZ			
		00	01	11	10
X	0	m ₀	m ₁	m ₃	m ₂
	1	m ₄	m ₅	m ₇	m ₆

- There is only one possibility of grouping 8 adjacent min terms.
- The possible combinations of grouping 4 adjacent min terms are $\{(m_0, m_1, m_3, m_2), (m_4, m_5, m_7, m_6), (m_0, m_1, m_4, m_5), (m_1, m_3, m_5, m_7), (m_3, m_2, m_7, m_6) \text{ and } (m_2, m_0, m_6, m_4)\}$.
- The possible combinations of grouping 2 adjacent min terms are $\{(m_0, m_1), (m_1, m_3), (m_3, m_2), (m_2, m_0), (m_4, m_5), (m_5, m_7), (m_7, m_6), (m_6, m_4), (m_0, m_4), (m_1, m_5), (m_3, m_7) \text{ and } (m_2, m_6)\}$.

4 Variable K-Map

The number of cells in 4 variable K-map is sixteen, since the number of variables is four. The following figure shows **4 variable K-Map**.

		YZ			
		00	01	11	10
WX	00	m ₀	m ₁	m ₃	m ₂
	01	m ₄	m ₅	m ₇	m ₆
	11	m ₁₂	m ₁₃	m ₁₅	m ₁₄
	10	m ₈	m ₉	m ₁₁	m ₁₀

- There is only one possibility of grouping 16 adjacent min terms.
- Let R_1, R_2, R_3 and R_4 represents the min terms of first row, second row, third row and fourth row respectively. Similarly, C_1, C_2, C_3 and C_4 represents the min terms of first column, second column, third column and fourth column respectively. The possible combinations of grouping 8 adjacent min terms are $\{(R_1, R_2), (R_2, R_3), (R_3, R_4), (R_4, R_1), (C_1, C_2), (C_2, C_3), (C_3, C_4), (C_4, C_1)\}$.

K-map can take two forms Sum of Product (SOP) and Product of Sum (POS) according to the need of problem. K-map is table like representation but it gives more information than TRUTH TABLE. We fill grid of K-map with 0's and 1's then solve it by making groups.

Steps to solve expression using K-map-

1. Select K-map according to the number of variables.
2. Identify minterms or maxterms as given in problem.
3. For SOP put 1's in blocks of K-map respective to the minterms (0's elsewhere).
4. For POS put 0's in blocks of K-map respective to the maxterms(1's elsewhere).
5. Make rectangular groups containing total terms in power of two like 2,4,8 ..(except 1) and try to cover as many elements as you can in one group.
6. From the groups made in step 5 find the product terms and sum them up for SOP form.

ASSIGNMENT III (PART- 4)

15. What is the simplified boolean expression for the following K-map:

$UV \backslash WZ$	$\bar{W}\bar{Z}$	$\bar{W}Z$	WZ	$W\bar{Z}$
$\bar{U}\bar{V}$	1 0	1 1	1 3	1 2
$\bar{U}V$			1 7	1 6
UV		1 13	1 15	
$U\bar{V}$	1 8	1 9		1 10

16. Simplify using Karnaugh's map for:

$$F(w, x, y, z) = m_2 + m_3 + m_4 + m_5 + m_6 + m_7 + m_9 + m_{11} + m_{13} \text{ where } m_i \text{ is the } i\text{th term.}$$

Geography
Class XII
Chapter 3 (Part 2)

The Indus Ganga Brahmaputra plain:-

Relief features of the plain: Depending upon the difference of the surface relief, the plain is divided into four divisions :

i) The Bhabar:- It lies along the foot of the Shiwalik from the Indus to the Tista river. It is a narrow belt of 8 to 16 km. the porosity of this zone is so high that all streams disappear here.

ii) The Tarai :- it is situated at the south of Bangar and runs parallel to it. It is Marked by the re- emergence of the underground rivers of the bhabar belt. The alluvium deposited here is finer than that deposited in the Bhabar. Dampness, thick forest with the variety of wildlife are found over here.

iii) The Bhangar:- It is composed of old alluvium and forms the alluvial terrace above the floodplains. we can find calcareous deposition in this soil which is known as kankar. The bhangar in The Delta region of Bengal has extensive laterite formation known as Barind.

iv) The Khadar :- the flood plain which has new year new year new year new year Newer alluvium is called khadar. A new layer of Aluminium is deposited by river floods almost every year. The Khadar is often characterised by fertile soil and intensive agriculture.

v) Bhur:- It denotes an elevated piece of land situated along the bank of Ganga River specially in the upper Ganga Yamuna doab. During the hot dry month of the year the deposition of alluvium by wind give rise to this landform.

vii) Barind:- This area is situated between the Ganga and Brahmaputra river. The average elevation of this area is about hundred metres to 30 metres.

Viii) Barkhan :- Abba Khan is a Crescent shaped sand dunes found in the Rajasthan desert. the average height of a bar Khan is about 30 to 35 metres and its width is usually 10 to 20 times its height.



Regional division of the plain:-

1. The Rajasthan Plain:- this desert plain lies mainly between the Aravali Range in the East and the Alluvial plain of the Indus in the west. The vast desert is an undulating plain whose average elevation is about 325 near to the Aravalli range. This area is having 25 CM average annual rainfall and a very little vegetation cover specially are of cactus. One of the main rivers of this area is luni. The Sambar is one of the most important lake of this area.

2. The Punjab -Haryana Plain:- The part of the plain formed as a result of alluvium deposits by five rivers name Satluj, Beas, Ravi, Chenab and Jhelum, is known as the Punjab plain. it is primarily made up of doabs which means the land between two rivers. The mass of alluvium which is covering the broad floodplains of Khadar in this region is locally known as dhaya. The Khadar belt which is also known as bet land, is agriculturally valuable. the northern part of this plain adjoining the Shiwalik hills have been intensively eroded by numerous streams called Chos.

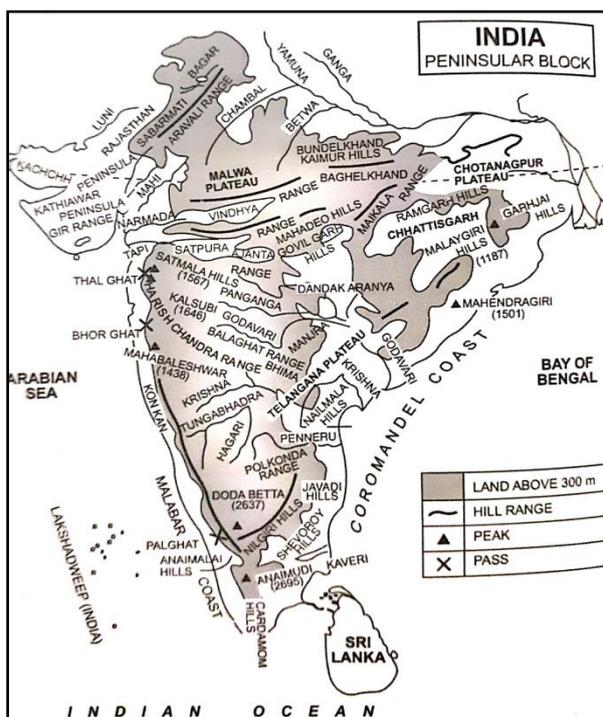
3. The Ganga Plain:- the Ganga plain lies in UP, Bihar and West Bengal. The Deltaic part of this plain is in West Bengal and Bangladesh. the slope of the screen is from east to south

east all the there a local variation in the floor the slope of the plain is from east to south east although there are local variation in the slope. this plain is further divided into three division i.e. i) upper Ganga plain, ii) middle Ganga plain middle Ganga plain and iii) lower Ganga plain two different landforms we can find in this Plains are 'Khol's' and 'Bhur'. The slope between two doabs with relative variation of 15 to 30 meters relief is locally known as 'Khol's' and 'Bhur' can be found in upper doab formed by the aeolian deposits.

4)The Brahmaputra Plain :- This is also known as Assam plain because it is located in Assam. The entire plain has been formed by the Brahmaputra and its tributaries.

Difference between Bhabar and Tarai	
Bhabar	Tarai
1. It lies along the foot of the Shiwaliks from the Indus to the Tista.	1. It lies to the south of the Bhabar and runs parallel to it.
2. It is 8 to 16 km wide.	2. It is 20 to 30 km wide.
3. It comprises of pebble-studded rocks in the shape of porus beds.	3. It is composed of comparatively finer alluvium and is covered by forests.
4. Due to porosity of the rocks, the streams disappear and flow underground.	4. The underground streams of the bhabar re-emerge on the surface and give birth to marshy area.
5. This region is not much suitable for agriculture.	5. Most parts of the tarai area are reclaimed for agriculture.

Difference between Bhangar and Khadar	
Bhangar	Khadar
1. This is a highland composed of old alluvium.	1. This is a lowland composed of new alluvium.
2. It is always above the level of the flood plains.	2. It is flooded almost every year and new alluvium is deposited.
3. It is often impregnated with calcareous concretions known as <i>kankar</i> .	3. It is often characterised by clay soil which is very fertile.
4. This is not much suited for cultivation.	4. Intensive agriculture is practised here.
5. It is known as ' <i>dhaya</i> ' in Punjab.	5. It is called ' <i>ber</i> ' in Punjab.



The Peninsular Plateau :- This is the oldest landmass of India whose general elevation is 600 to 900 meters. This plateau is divided into three parts by the river Narmada and Tapi.

- i) The Malwa Plateau.
- ii) The Deccan Plateau.
- iii) The Chotanagpur Plateau

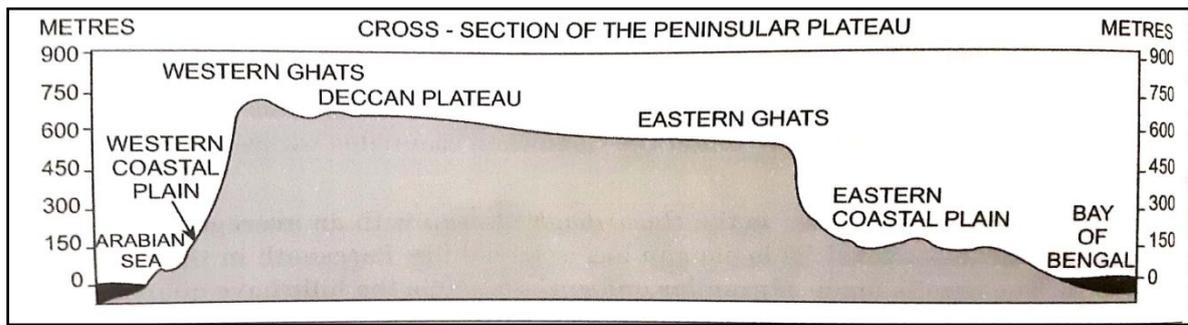
i)The Malwa Plateau:- the triangular portion lying North-west of Narmada-Tapi river and the Vindhya range is known as the Malwa plateau. The elevation of this area is generally 800 metres from the sea level and the slope is towards north-east. The Chambal River has cut deep ravines and gullies and the area is usually termed as Badlands.

ii) The Deccan Plateau:-It is triangular in shape and located in the south of river Tapi. The Northwest border of this plateau

is demarcated by the Satpura and Vindhya ranges and the northern border

is demarcated by Mahadev and Mahakal Ranges, in the east it has Eastern Ghats and in the west it has Western Ghats ranges. The average altitude is 600 metres to 1000 metres. The general slope of this plateau is from west to East so most of the rivers of this place are flowing from west to east except the Narmada and Tapi River.

iii) The Chotanagpur Plateau:- The Chotanagpur Plateau represents the north-eastern projection of the Indian Peninsula. It covers the area of Jharkhand Northern part of Chhattisgarh and Purulia district of West Bengal. The average elevation of this plateau is 700 metres above the sea level. The highest general elevation of about 1100 metres is in the mid Western portion known as the Pat land. The few rivers flowing from this region are Damodar and Barkar river.



The Aravalis:- this mountain range runs for a distance of about 800 kilometres from Ahmadabad to Delhi. It is an old fold mountain. The maximum height of this range is 1722 metres at Guru Shikhar in Mount Abu.

Difference between Western Ghats and Eastern Ghats	
Western Ghats	Eastern Ghats
1. It runs parallel to the western coast in a north-south direction from the Tapi river to Kanniyakumari.	1. It runs in a north-east to south-west direction parallel to the eastern coast from Odisha to the Nilgiri hills.
2. Its average elevation is 900 to 1,100 metres above sea-level.	2. Its average elevation is less than that of the western Ghats and is about 600 metres above sea-level.
3. Its average width is 50 to 80 km.	3. It is wider than the western Ghats with its width varying from 100 to 200 km.
4. It stands like a continuous wall and can be crossed through passes only.	4. It has been divided into several parts by large rivers which have made their passage through this range up to the sea.
5. It has structural unity.	5. Structural unity is lacking in this range.

The coastal plains:-

The Western Coastal plain:- it is divided into three parts. The northern part from Mumbai to Goa is called Konkan Coast, the middle part is called the Kannad plain and the southern part to Kanyakumari is known as Malabar Coast. Lagoons and back water are the most important features of this area. Lagoons are salt water lakes, separated from the main sea by sand bars and spits.

The Eastern Coastal plain:- it is situated along the Bay of Bengal and divided into two parts- the northern part between the Mahanadi and Krishna river is known as Northern cirar plain and the southern part between the Krishna and Kaveri is Coromandel coast. The Chilka and Pulicat Lakes are situated in this coast situated in this coast.

Difference between West Coastal Plain and East Coastal Plain

<i>West Coastal Plain</i>	<i>East Coastal Plain</i>
1. This plain is located between the Western Ghats and the Arabian Sea coast.	1. This plain is located between the Eastern Ghats and the coast of Bay of Bengal.
2. It is a narrow plain with average width of 64 km.	2. It is comparatively broader plain with an average width of 80-100 km.
3. This plain is drained by several short and swift streams which are unable to form deltas.	3. Big rivers like the Mahanadi, the Godavari, the Krishna and the Cauvery have formed large deltas.
4. There are several lagoons especially in the southern part of this plain.	4. Lagoons are comparatively less in this plain.
5. The western plain has an indented coast which supports many ports.	5. The eastern plain has more or less a straight coast where good ports are lacking.

The Islands:- In India there are two main islands situated in the Arabian Sea and Bay of Bengal. In the Arabian Sea, the Lakshadweep islands are situated, which are made up of corals. On the other hand, Andaman and Nicobar islands are situated in the Bay of Bengal, which are volcanic islands. Barren is the active volcano present over here.

Home Assignment 4:-

1. Write down any two differences of each of the following:
 - i) Lakshadweep and Andaman- Nicobar islands
 - ii) Eastern coastal plain and Western coastal plain
2. Define the following terms:
 - i) Barind
 - ii) Chos
 - iii) Barkhan
3. Write down three characteristics of the Peninsular Plateau of India.
4. What do you understand by 'Kols' and 'Bhur'?
5. Write a short note on the Punjab -Haryana Plain.

Assignment - 5

Maths. Class - XII

Determinant

Ex 1.

$$\textcircled{1} \begin{vmatrix} 1 & a & bc \\ 1 & b & ca \\ 1 & c & ab \end{vmatrix} = ?$$

$$\begin{vmatrix} 1 & a & bc \\ 0 & (b-a) & ca-bc \\ 0 & (c-a) & ab-bc \end{vmatrix} \begin{matrix} R_2^1 = R_2 - R_1 \\ R_3^1 = R_3 - R_1 \end{matrix}$$

$$= \begin{vmatrix} 1 & a & bc \\ 0 & (b-a) & c(a-b) \\ 0 & (c-a) & b(a-c) \end{vmatrix} = (a-b) \begin{vmatrix} 1 & a & bc \\ 0 & -1 & c \\ 0 & -1 & b \end{vmatrix}$$

$$= (a-b) \begin{vmatrix} 1 & a & bc \\ 0 & -1 & c \\ 0 & 0 & (b-c) \end{vmatrix} (R_3^1 = R_3 - R_2)$$

$$= (a-b) (-b+c)(a-c) = (a-b)(c-b)(a-c)$$

$$= (a-b)(b-c)(c-a). \underline{\text{Ans}}$$

Ex-2 prove that without expanding :-

$$\begin{vmatrix} 0 & a & -b \\ -a & 0 & c \\ b & -c & 0 \end{vmatrix} = 0$$

Now $\Delta = \begin{vmatrix} 0 & a & -b \\ -a & 0 & c \\ b & -c & 0 \end{vmatrix}$

$$= (-1)^3 \begin{vmatrix} 0 & -a & b \\ a & 0 & -c \\ -b & c & 0 \end{vmatrix} \quad [\text{common in every col.}]$$

$$= - \begin{vmatrix} 0 & -a & b \\ a & 0 & -c \\ -b & c & 0 \end{vmatrix}$$

$$= - \begin{vmatrix} 0 & a & -b \\ -a & 0 & c \\ b & -c & 0 \end{vmatrix} \quad [\text{Transpose } \Delta = \Delta^T]$$

$$= - \Delta$$

Now $\Delta = -\Delta$, $2\Delta = 0$, or $\Delta = 0$.
proved

Ex-3. Find the value $\begin{vmatrix} 1 & \omega^3 & \omega^2 \\ \omega^3 & 1 & \omega \\ \omega^2 & \omega & 1 \end{vmatrix}$

where ω is the cube root of unity.

Now $\omega^3 = 1$, $1 + \omega + \omega^2 = 0$. (we know that)

$$\begin{vmatrix} 1 & 1 & \omega^2 \\ 1 & 1 & \omega \\ \omega^2 & \omega & 1 \end{vmatrix} \stackrel{R_2' = R_2 - R_1}{=} \begin{vmatrix} 1 & 1 & \omega^2 \\ 0 & 0 & (\omega - \omega^2) \\ \omega^2 & \omega & 1 \end{vmatrix}$$

$$= 1 \left\{ (\omega^2 - \omega) \omega \right\} - \left\{ -\omega^2 (\omega - \omega^2) \right\}$$

$$= \omega^3 - \omega^2 + \omega^3 - \omega^4$$

$$= 1 - \omega^2 + 1 - \omega = 2 - (\omega + \omega^2)$$

$$= 2 + 1 = 1 + 2 = 3 \text{ Ans}$$

Ex 4 prove that

$$\begin{vmatrix} a & b & c \\ a-b & b-c & c-a \\ b+c & c+a & a+b \end{vmatrix} = a^3 + b^3 + c^3 - 3abc.$$

S.H.S

$$\begin{vmatrix} a+b+c & b & c \\ 0 & b-c & c-a \\ 2(a+b+c) & c+a & a+b \end{vmatrix} \quad [C_1' = C_1 + C_2 + C_3]$$

$$= (a+b+c) \begin{vmatrix} 1 & b & c \\ 0 & b-c & c-a \\ 2 & c+a & a+b \end{vmatrix}$$

$$= (a+b+c) \begin{vmatrix} 1 & b & c \\ 0 & (b-c) & (c-a) \\ 0 & (c+a-2b) & (a+b-2c) \end{vmatrix} \quad [R_3' = R_3 - 2R_1]$$

$$= (a+b+c) \begin{vmatrix} 1 & b & c \\ (b-c) & (c-a) \\ (c+a-2b) & (a+b-2c) \end{vmatrix}$$

$$= (a+b+c) \begin{vmatrix} 1 & b & c \\ (b-c) & (c-a) \\ (a-b) & (b-c) \end{vmatrix} \quad (R_2' = R_2 + R_1)$$

$$= (a+b+c) [(b-c)^2 - (c-a)(a-b)]$$

$$= (a+b+c) [b^2 + c^2 - 2bc - ca + c^2 - ab + bc]$$

$$= (a+b+c) [a^2 + b^2 + c^2 - ab - bc - ca]$$

$$= a^3 + b^3 + c^3 - 3abc \quad \underline{\underline{\text{proved}}}$$

Home work

① without expanding, prove that
$$\begin{vmatrix} a+b & b+c & c+a \\ c & a & b \\ 1 & 1 & 1 \end{vmatrix} = 0$$

② prove that
$$\begin{vmatrix} \alpha & \beta & \gamma \\ \alpha^2 & \beta^2 & \gamma^2 \\ (\beta+\gamma) & (\gamma+\alpha) & (\alpha+\beta) \end{vmatrix} = (\alpha-\beta)(\beta-\gamma)(\gamma-\alpha)(\alpha+\beta+\gamma)$$

③ prove that
$$\begin{vmatrix} -a^2 & ab & ac \\ ba & -b^2 & bc \\ ca & cb & -c^2 \end{vmatrix} = 4a^2b^2c^2$$

④ prove that
$$\begin{vmatrix} a^2+1 & ab & ac \\ ba & b^2+1 & bc \\ ca & cb & c^2+1 \end{vmatrix} = a^2+b^2+c^2+1$$

⑤ prove that
$$\begin{vmatrix} a & b-c & c+b \\ a+c & b & c-a \\ a-b & b+a & c \end{vmatrix} = (a+b+c)(a^2+b^2+c^2)$$

DREAMLAND SCHOOL
CLASS XII (session 2020-21)
PSYCHOLOGY HOME WORK-3A

Chapter 2:Personality

Quick review of the content

- **Personality** refers to individual differences in characteristic patterns of thinking, feeling and behaving. The study of personality focuses on two broad areas: One is understanding individual differences in particular personality characteristics, such as sociability or irritability. The other is understanding how the various parts of a person come together as a

Concepts

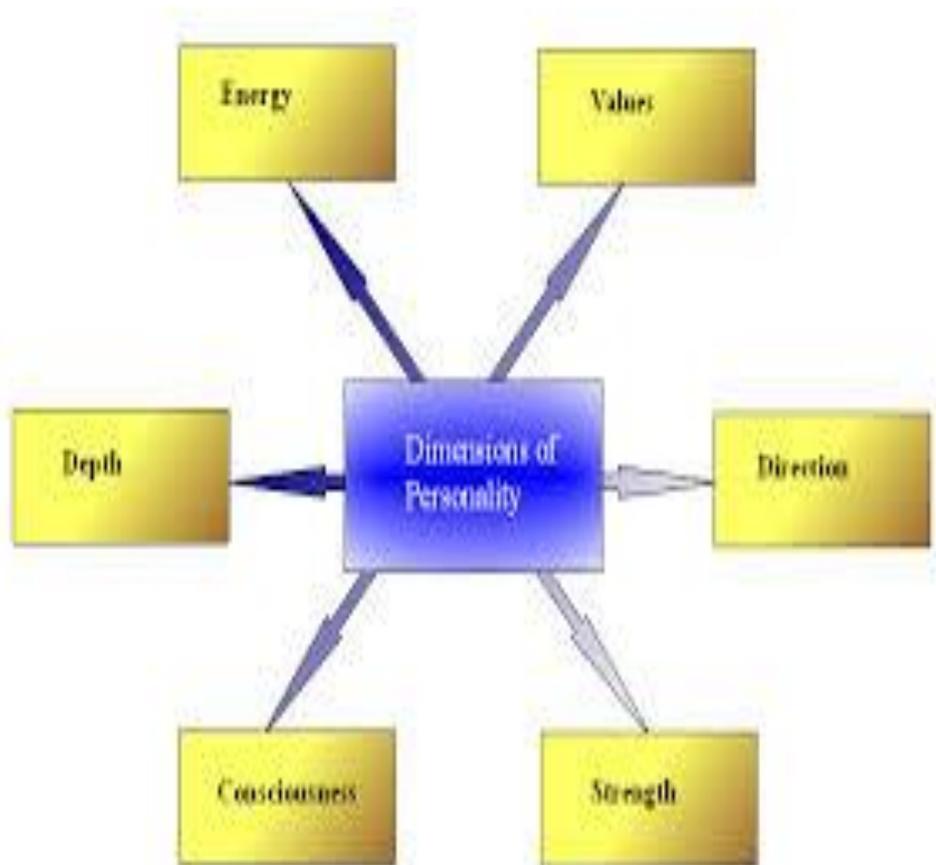
- The word **personality** comes from the Latin root **persona**, meaning "mask." According to this root, **personality is the impression we make on others; the mask we present to the world.**
- **Personality is defined as "a unique set of traits and characteristics, relatively stable over time."** The definition further suggests that **personality does not change from day to day. Over the short-term, our personalities are relatively set or stable. However, definition does not suggest that personality is somehow rigid, unchangeable, and cast in concrete. Definition recognizes that, over a longer term, personality may change.**

- The word **personality** is highly associated with the word "self".
- **Self and Personality** –can be referred as the characteristics in which we define our existence.
- These characteristics are usually acquired from our experiences and they show up in our behaviour.
- These characteristics make people different from each other. Hence they behave differently in similar situations.
- Also same people behave almost similarly in different situations.

- Hence it is safe to say that **Different people have different personalities in different situations.**



- **Definitions of Personality-**



- **Raymond Cattell defined personality** as " That which permits a prediction of what a person will do in a given situation." Source Traits are the underlying basic factors of an individuals
- "Personality is the dynamic organization within the individual of those psychophysical systems that determine his characteristics behavior and thought" **(G.W Allport, 1961, p. 28).**

According to Allport , following can be said for personality

Characteristics

- **Personality is an internal process that guides behaviour.**
- **Gordon Allport (1961) makes the point that personality is psychophysical, which means both physical and psychological.**
- **Biological and genetic phenomena do have an impact on personality.**
- **Child (1968) makes the point that personality is stable – or at least relatively stable.**
- **Child (1968) includes consistency (within an individual) and difference (between individuals) in his definition,**
- **Allport (1961) refers to characteristic patterns of behavior within an individual.**

- **Hans Eysenck** was a **personality** theorist who focused on temperament—innate, genetically based **personality** differences. He believed **personality** is largely governed by biology, and he viewed people as having two specific **personality** dimensions: extroversion vs. introversion and neuroticism vs. stability.

Personality Terms

- **Personality:** a person's internally based characteristic way of acting and thinking.
- **Character:** Personal characteristics that have been judged or evaluated
- **Temperament:** Hereditary aspects of personality, including sensitivity, moods, irritability, and distractibility
- **Personality Trait:** Stable qualities that a person shows in most situations
- **Personality Type:** People who have several traits in common

THEORIES OF PERSONALITY

Type Theories: This approach attempts to comprehend and segregate people into groups by examining and based on their **broad patterns in** observed **behaviours**.

So each pattern type refers to a group of people who have similarity of their behavioural characteristics that match with the pattern that set denotes.

Greek physician Hippocrates had proposed a typology of personality based on fluid/humour: Sanguine, Phlegmatic, melancholic, choleric.

Charak Samhita famous treatise on Ayurveda classifies as- *Vata, pitta* and *kapha* based on 3 humoral elements- *Tridosha*

Typology of personality based on *trigunas*:

Sattva- Cleanliness, Truthfulness, dutifulness, detachment and discipline.

Rajas- Intensive activity, desire for sense gratification, dissatisfaction, envy.

Tamas- Anger, arrogance, depression, laziness, feeling of helplessness.

Assignment Questions

- 1 Define personality according to Allport.
2. Write role Eyesenck in psychology.
- 3.What is the relation between self and personality.