

# **Virtual University of Pakistan**

**BIO301**

## **Essentials Of Genetics**

**Final term Past Papers**

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**Group of VU Biologists**

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What are epigenetic disorders? 10 marks

Write function of vntr ? 5 marks

How mutation alter gene function? 10 marks

What are point mutations and described three chromosomal structure changes? 5 marks

Gene frequency in autosomal dominant trait? 2 marks

What are epigenetics? 2 marks

Write three epigenetic disorders? 3 marks

STRP function

epigenetics..

causes of epigenetics.

VNTR mean and application..

point mutation.

long questionn: chromosomal non disjunction types and causes..

and how mutation change alter function?

Define point mutation. 2 marks

Define epigenetics? 2 marks

Define reverse, forward and neutral mutation. 3 marks

Write any three mitochondrial mutation disease. 3 marks

Frameshift mutation. 5 marks.

Write any five basic complication in pattern of inheritance. 5 marks:

What is chromosomal aberration? how it is classified? 10 marks

How mutations alters the gene function? 10 marks

Intronic position with respect to exon (2)

Epigenetic definition (2)

Point mutation and its classifications (5)

Chromosomal aberration with type (5)

How chromosomal aberration change gene (10)

VNTR ? Application (5)

Frameshift mutations: 2 marks

Define epigenetics: 2 marks

3 disorders of Autosomal dominant disorders: 3 marks

Forward, reverse, and neutral mutations: 3 marks

Point mutations and enlist 3 structural changes in chromosomes:5marks

5 complications in inheritance:5marks

Modification of epigenetica:10marks

Mutation alter genes expression:10marks

1:Write the function of STR?2 mrks

2:define epigenetics?2 marks

3:write the name of the three genetic disorders? 3 marks

4:How epigenetics occur?3 marks

5:what is the point mutation?enlist the structural mutations?5 mrks

6:what is VNTR?writes its five applications? 5 mrks

7:what is chromosomal abbreastion?how it is classified?10 mrks

8:how mutations alters the gene function?10 mrks

Q1: What is the function of Short Tandem Repeats Polymorphism? 2 marks

Q2: Define Epigenetics? 2 marks

Q3: What are the three main causes for epigenetics? 3 marks

Q4: Give three genetic disorders? 3 marks

Q5: What is chromosomal aberration? Write at least three variations caused due to change in chromosomal structure? 5 marks

Q6:Enlist 5 complications caused due to the inheritance pattern? 5 marks

Q7: What is point mutation? How mutation alter gene function? 10 marks

Q8: Explain Chromosomal non disjunction, its types and cause? 10 marks

(For MCQs prepare ppts very well. 30 out of 40 were exactly from there, other 10 were also from ppts but they were asked in a conceptual way).

Non disjunctio of chromosomes?types?causes?10 marks

Mutations ? Hoe can they alter the function of a gene ? 10 marks

Single nucleotides polymorphism ?

5 complexities of inherited gene?

Mcqs were very confusing .. overall ..whole paper was confusing

1.Write the modification of epi genetics ? 10

2.How mutation alter gene function ? 10

SHORT QUESTION

3.Define epigenetics ? 2

4.Write the common mitochondrial diseases ? 2

5.What is VNTR ? write their 5 application. ? 3

6.What is point mutation and how change in chromosome structure? 3

7.Write rules of mutation ? 3

Epigenetic?

Cause of epigenetic?

Linker and causative SNP?

Point mutation?

Chromosomal aberration 10 marks?

Baqi bhool gya....

Mcq zyada tr mutation waly topic se thy

1. Write the modification of epi genetics ? 10

2. How mutation alter gene function ? 10

SHORT QUESTION

3. Define epigenetics ? 2

4. Write the common mitochondrial diseases ? 2

5. What is VNTR ? write their 5 application. ? 3

6. What is point mutation and how change in chromosome structure? 3

7. Write rules of mutation ? 3

Aik question or thaw o yaad nai h.... time 2 hrs

MCQ'S FROM PPTS.

1. epigenetic modification. 10 marks

2- how mutation alter gene function. 10 marks

3- define epigenetics. 2 marks

4- enlist three common autosomal dominant disorders. 3 marks

5- differentiate between forward, reverse and neutral mutations. 3 marks

6- what is point mutation. enlist three variation that occur due to change in chromosomal structure. 5 marks

7- five complications in inheritance pattern. 5 marks

ESSENTIAL OF GENETICS 25 FEB 2017 4:30

SUBJECTIVE 40 MARKS

1. Write the modification of epi genetics ? 10

2. How mutation alter gene function ? 10

SHORT QUESTION

3. Define epigenetics ? 2

4. Write the common mitochondrial diseases ? 2

5. What is VNTR ? write their 5 application. ? 3

6. What is point mutation and how change in chromosome structure? 3

7. Write rules of mutation ? 3

Aik question or thaw o yaad nai h.... time 2 hrs

MCQ'S FROM PPTS.

Difference b/w chiasmata & cross over?

Meiosis I and II?

Prophase I?

Stages of prophase I?

Which cell division occurs in somatic cells?

Oogenesis and spermatogenesis?  
and mcqs was from ppt slides totally

define karyotype idiotype, linkage inheritance, rule organizes my international committee,  
3 genetic disorders, single gene and multifactorial disorders, VNTR, AFLP, inheritance, dominant allele, frequency of dominant allele,  
5 basics which cause difficulty in inheritance pattern and all the mcqs were from starting topics  
301 Paper 4-03-16

- \*Diff b/w forward and reverse genetics
  - \*Reason of drawing pedigree
  - \*what is frequency range of autosomal dominant disorder?
  - \*Diff b/w RAPD and AFLP
  - \*Location of intronic sequence with respect to exons
  - \*Rule of mutation nomenclature
  - \*3 mitochondrial diseases
  - \*3 autosomal dominant disorder
  - \*Types of genetic disorders
- LONG OF 5 MARKS
- \*Five complications in inheritance pattern
  - \*what is VNTR? Write five applications of VNTR.
- 50% objective from first 20 and 50% from 100 to 125

[1 Comment](#)

301 Paper 3-03-16

- \*Difference between linked and causative SNP
  - \*Diff b/w single gene and multifactorial gene
  - \*Diff b/w forward and reverse genetics
  - \*Function of STRP
  - \*Reason of drawing pedigree
  - \*Diff b/w centromere and telomere
  - \*what is frequency range of autosomal dominant disorder?
  - \*Diff b/w RAPD and AFLP
  - \*Diff b/w meiosis I and II
  - \*Location of intronic sequence with respect to exons
  - \*Rule of mutation nomenclature
  - \*3 mitochondrial diseases
  - \*3 autosomal dominant disorder
  - \*Types of genetic disorders
- LONG OF 5 MARKS
- \*Five complications in inheritance pattern
  - \*what is VNTR? Write five applications of VNTR.
- types of polymorphisms, VNTR function, locus, mitochondrial disorder, autosomal dominant recessive disorder
- Some different questions of biology

Define and explain mitotic apparatus?  
Why high gene density in prokaryotes?

ANS of BIO301 Paper

types of polymorphisms.

Types of Polymorphic DNA Sequences

- ☐ RFLP: Restriction Fragment Length Polymorphism
- ☐ VNTR: Variable Number Tandem Repeats (8 to > 50 base pairs)

Types of Polymorphic DNA Sequences

- ☐ STR: Short Tandem Repeats (1– 8 base pairs).
- ☐ SNP: Single Nucleotide Polymorphisms
- ☐ AFLP: Amplified Fragment Length Polymorphism,

,locus

locus (plural loci), in [genetics](#), is the specific location or position of a [gene](#), [DNA sequence](#), on a [chromosome](#). Each chromosome carries many genes; humans' estimated 'haploid' protein coding genes are 20,000-25,000, on the 23 different chromosomes. A variant of the similar DNA sequence located at a given locus is called an [allele](#). The ordered list of loci known for a particular [genome](#) is called a [gene map](#). [Gene mapping](#) is the process of determining the locus for a particular [biological trait](#).

,mitochondrial disorder

Common mitochondrial diseases

- ☐ Myoclonic epilepsy
- ☐ Mitochondrial recessive ataxia
- ☐ Leber hereditary optic neuropathy
- ☐ Sensory ataxia neuropathy

,autosomal dominant disorder

Autosomal Dominant diseases

- ☐ Marfan syndrome
- ☐ Huntington's disease
- ☐ Retinoblastoma
- ☐ Waardenburg syndrome
- ☐ Myotonic dystrophy
- ☐ Polycystic kidney disease
- ☐ Achondroplasia
- ☐ Polydactyly
- ☐ Hereditary hearing loss

recessive disorder

Common recessive disorders

- ☐ Bloom syndrome
- ☐ Carpenter syndrome
- ☐ Cystic fibrosis
- ☐ Thalassemia
- ☐ Many forms of mental retardation
- ☐ Gaucher's disease
- ☐ Glycogen storage diseases
- ☐ Rotor syndrome
- ☐ Many of eye diseases

Classification of genetic disorders

- ☐ Multifactorial disorders
- ☐ Single gene disorders
- ☐ Chromosomal disorders
- ☐ Mitochondrial disorders

- ☐ Somatic mutations (cancers)

### Karyotype

A karyotype is the number and appearance of chromosomes in the nucleus of a eukaryotic cell. The term is also used for the complete set of chromosomes in a species, or an individual organism

### idiotypic

He defined idiotypic as the set of epitopes on the V region of an antibody molecule, where epitope means an antigenic determinant. He also defined the "paratope" to be that part of an antibody variable region that binds to an antigen.

Single gene can give codominance, incomplete dominance, overdominance

Genetic maps have been used successfully to find the single gene responsible inherited disorders, like cystic fibrosis and muscular dystrophy.

### Multifactorial diseases

- ☐ Asthma
- ☐ Cancers
- ☐ Ciliopathies
- ☐ Cleft palate
- ☐ Diabetes
- ☐ Heart diseases
- ☐ hypertension
- ☐ inflammatory bowel disease
- ☐ intellectual disability
- ☐ mood disorder
- ☐ Obesity
- ☐ infertility

### Frequency of genetic disorders



Frequency of autosomal dominant disorders

Frequency of autosomal dominant disorders varies between 3 – 9.5 per 1000 individuals

Frequency of autosomal recessive disorders

Frequency of autosomal recessive disorders is between 2-2.5 per 1000 individuals.

Frequency of x-linked disorders

Frequency of X-linked disorders is between 0.5 – 2 per 1000 individuals.

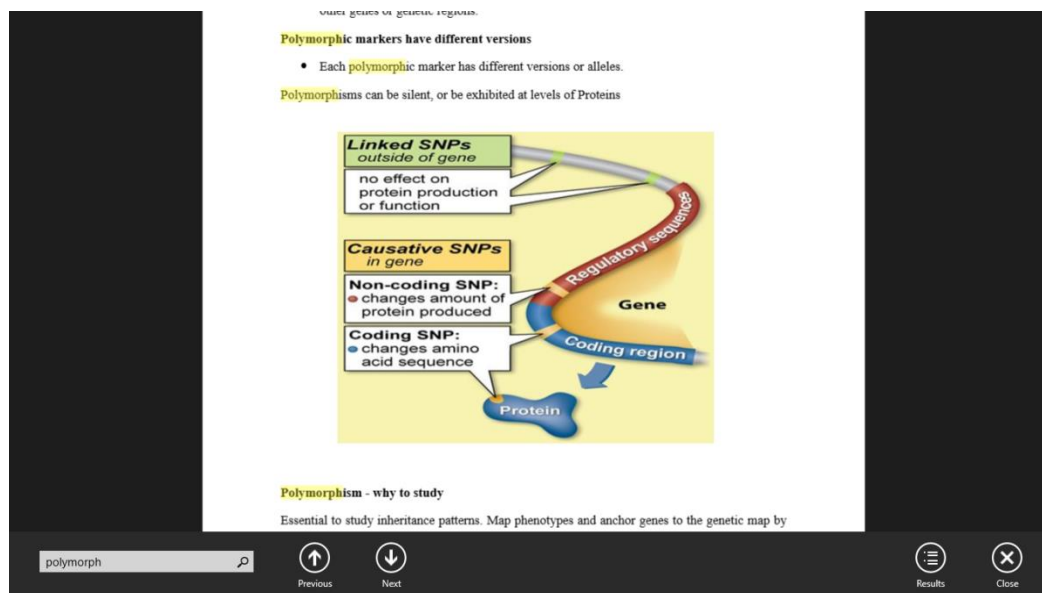
Frequency of chromosomal disorders

Frequency of chromosomal disorders is between 6-9 per 1000 individuals.

Frequency of multifactorial disorders

Frequency of multifactorial disorders is between 20 – 50 per 1000 individuals.

Most common multifactorial disorders are cancers, diabetes, heart diseases.



What is RFLP: RFLP is a difference in homologous DNA sequences that can be detected as fragments of different lengths after digestion of the DNA samples.

Most RFLP markers are heterozygous and highly locus-specific.

RFLP probe is a labeled DNA sequence that hybridizes with one or more fragments of the digested DNA sample after they were separated by gel electrophoresis.

### VNTR

- ☐ VNTR are short nucleotide sequences organized as a tandem repeats on genomes.
- ☐ Found on many chromosomes
- ☐ Show variations in length between individuals.

### Size of VNTR

- ☐ The size of repeat is about 7 to few tens of base pairs long.

### Each variant acts as inherited allele

- ☐ Each variant acts as an inherited allele, allowing them to be used for personal or parental identification

### Importance of VNTR

VNTRs are an important source of RFLP genetic markers used in linkage analysis (mapping) of genomes. When removed from surrounding DNA by the PCR or RFLP methods, and their size determined by gel electrophoresis or Southern blotting. As a result, they produce a pattern of bands unique to each individual.

### VNTR function

### Applications of VNTR

- ☐ Microbiology
- ☐ DNA fingerprinting
- ☐ Genetic diversity
- ☐ Forensics
- ☐ Mapping of genomes
- ☐ Breeding patterns of wild or domesticated animals

### Mutation nomenclature

- ☐ All variants should be described at the most basic level, i.e. DNA level.

- ☐ Descriptions should always be in relation to a reference sequence, either a genomic or a coding DNA sequence.
- ☐ Although theoretically a genomic reference sequence seems best, in practice a coding DNA reference sequence is preferred.
- ☐ Good for promoters, alternative splicing etc.
- ☐ When the entire genomic sequence is not known, a cDNA reference sequence should be used.
- ☐ To avoid confusion in the description of a variant it should be preceded by a letter indicating the type of reference sequence used.
- ☐ Several different reference sequences can be used.
- ☐ "c." for a coding DNA sequence (like c.76A>T)
- ☐ "g." for a genomic sequence (like g.476A>T)
- ☐ "m." for a mitochondrial sequence (like m.8993T>C,)
- ☐ "r." for an RNA sequence (like r.76a>u)
- ☐ "p." for a protein sequence (like p.Lys76Asn)
- ☐ Describing genes / proteins, only official HGNC (HUGO gene nomenclature committee) gene symbols should be used ([www.genenames.org](http://www.genenames.org) )
- ☐ DNA reference sequence used should preferably be from the RefSeq database, listing both database accession and version number (like NM\_004006.2)

Type of Chromosomes based on Centromere position Chromosomes may differ in the position of the centromere.

Centromere is near the middle, metacentric

Centromere is toward one end, acrocentric or sub metacentric

Centromere is very near to end, telocentric

pedigree

A complete, detailed family history is called a pedigree. Pedigrees are used to determine the pattern of inheritance of a genetic disease within a family.

Generations of a pedigree as roman numerals

Generations in a pedigree diagram are numbered, by using Roman numerals, starting with the parental generation, at the top of the diagram as generation I.

Members of each generation are numbered from left to right

For convenience, the members of each generation are numbered across the line, from left to right, using normal numerals

Difference B/W Centromere and Telomere?

A centromere is a cellular structure involved in meiosis that creates spindle fibers and allows chromosomes to separate in cells. Telomeres are single-stranded DNA tails that form at the end of replicated DNA strands because they cannot be replicated. They are nonsense DNA, so nothing is lost in not replicating them. They protect exons--expressed DNA segments, and work in the cell aging process.

How mutation alter gene function? 10 marks

What are point mutations and described three chromosomal structure changes? 5 marks..?STRP function?

Define point mutation. 2 marks

Define epigenetics? 2 marks

Define reverse, forward and neutral mutation. 3 marksFrameshift mutation?

Forward, reverse, and neutral mutations?3 genetics disorder

Long questions

Complications to inheritance patterns

Mutation alter gene function

Point mutation and variation structural changes

Non disjunction chromosomes types and causes

Short

Define epigenetics and causes

linked and causative SNP

Frequency of autosomal dominant disorder

frameshift

Mcqs mostly mutation k topic me sy thy

describe complications to inheritance pattern?

How Mutation alter gene function?

what is Point mutation and how variation in structural changes occur?

Non disjunction ? Types of chromosomes ?and causes?

#Short:

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Define epigenetics and causes?  
what linked and causative SNP?  
what is Frequency of autosomal dominant disorder?  
define frameshift?

Splicing pathway... CRISTR STANDS FOR??? termination in short... Rna processing .. rna has short life span so how we can analyzed through what process fr elongation short

301 genetics,,,,,, 11.00 am  
enlist 3 genetics disorders.point mutatin,chromosoml aberration and cllsfcation.,

how mutation chnge gene function.

definition of forwrđ ,reversđ and neutral muation,complications of inheritance pattern,intronic location,epigenetic define,

difference b/w single gene disorders and multifactorial disorders. 2m

what is the location of intronic sequences wd respect to exons? 2m

define epigenetics. 2m

diffrentiate b/w RAPD and AFLP. 3m

differentiate b/w forward, reverse and neutral mutation. 3m

wt r basic 5 complications in inheritance pattern. 5m

wt point mutation? enlist at least 3 variations that occur due to change in the structure of chromosome? 5m

write a note on epigenetic modification. 10m

how mutations alter gene function ? 10m

ByBio (301) today paper

How mutation alter gene function? 10 marks

What are point mutations and described three chromosomal structure changes? 5 marks..?STRP function?

Bio 301. 3 march, 2017

1: Define point mutation. 2 marks

2: Define epigenetics? 2 marks

3: Define reverse, forward and neutral mutation. 3 marksFrameshift mutation?

Forward, reverse, and neutral mutations?3 genetics disorder?

Almost all q past paper se thee?

bio 301 final term 11AM

12 aug

36 MCQs

37.....difference b/w single gene disorders and multifactorial disorders. 2m

38.... what is the location of intronic sequences wd respect to exons? 2m

39....define epigenetics. 2m

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- 40.... differentiate b/w RAPD and AFLP. 3m  
41...differentiate b/w forward, reverse and neutral mutation. 3m  
42....wt r basic 5 complications in inheritance pattern. 5m  
43.... wt point mutation? enlist at least 3 variations that occur due to change in the structure of chromosome? 5m  
44... write a note on epigenetic modification. 10m  
45..... how mutations alter gene function ? 10m

- My today paper bio 301 at 11am

Long questions

1. Complications to inheritance patterns
2. Mutation alter gene function
3. Point mutation and variation structural changes
4. Non disjunction chromosomes types and causes

Short

Define epigenetics and causes

- 3.linked and causative SNP
4. Frequency of autosomal dominant disorder
- 5.frameshift

Mcqs mostly mutation

- topic me sy thy....

- Quiz Bio 301

Q: 1

Mutation which type a mutant phenotype back into the wild type.

Ans: Reverse mutation

Q: 2

A genetic disease or disorder appears as a result of mutations in an individual's \_\_\_\_\_.

Ans: DNA

Q: 3

Hunter's disease is an example of \_\_\_\_\_.

Ans: X-linked recessive disorder

Q: 4

A condition in which some people with an appropriate genotype fail to express the phenotype is known as the \_\_\_\_\_.

Ans: incomplete penetrance

Q: 5

Which one of the following is not influenced by the silent mutation?

Ans: Phenotype

Q: 6

Organism that exhibit suppressor mutation is/ are \_\_\_\_\_

Ans: Double mutant

Q: 7

Mutation that produce the change in the amino acid in protein product ( histidine in for arginine )

Ans: Missense mutation

Q: 8

Base analog have the similar structure with\_\_\_\_\_

Ans: standard bases of the DNA

Q: 9

Mutation which convert a DNA sequence into the stop codon.

Ans: Non sense mutation

Q: 10

The term Ashkenazi refers to the specific people of following population.

Ans: Jew population

- **Bio 301 paper**

- 

Bio 301 ka zaid past ..ma  
se tha...VNTR or us ke  
application?2)epigenetics  
modification?genetics  
disorder?SNTR function,?  
mutation alter gene  
function? Farwad reverse  
and natural mutation?  
freemshift mutation  
define?point mution or  
sath ma change  
chromosome structure  
pouch tha,?epigenetics  
define?

- 

- **subject: bio 301**

**Timing: 11am, 12/08/2017**

#final term #paper.

#long

1) describe complications to inheritance pattern?

2) . How Mutation alter gene function?

3) what is Point mutation and how variation in structural changes occur?

4) Non disjunction ? Types of chromosomes ?and causes?

#Short:

1) Define epigenetics and causes?

2) what linked and causative SNP?

3) what is Frequency of autosomal dominant disorder?

4) define frameshift?

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- **301 Genetics ...timming** 11.00 (final term) Enlist 3 genetic disorders. Point mutation. structural mutation of chromosomes. Chromosomal aberration and classify them. How mutation change the gene function. 5 basic complications of inheritance pattern. Define : Forward, reversed and neutral mutation.

### **301 genetics,,,,, 11.00 am**

enlist 3 genetics disorders. point mutation, chromosomal aberration and classification, how mutation change gene function. definition of forward, reversed and neutral mutation, complications of inheritance pattern, intronic location, epigenetic define, ?

### **Bio301 final term paper 12-8-17 at 8:00 am**

What is Chromosomal non-disjunction types, causes. 10

Mutations alter gene function 10

VNTR and its applications 5

Point mutation 5

Causes of epigenetics 3

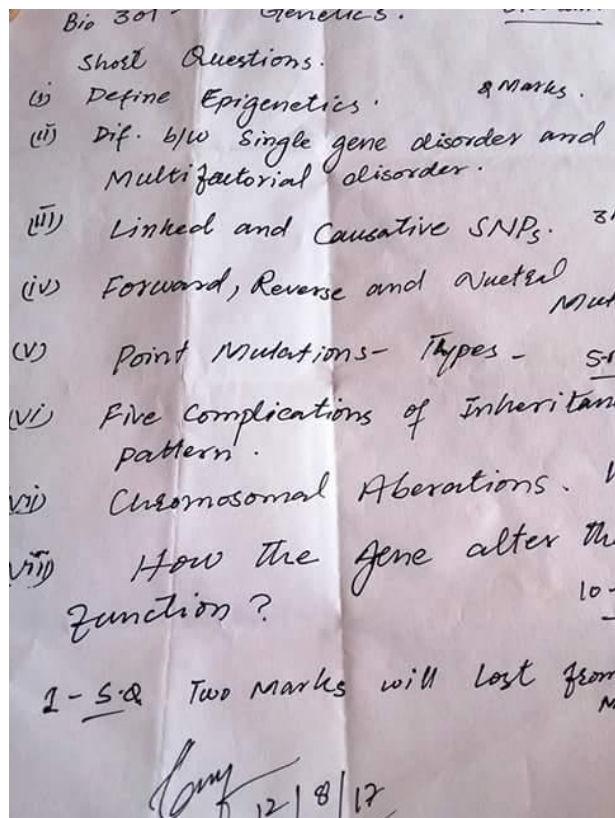
Write the name of 3 autosomal recessive disorders 3

Dif. b/w multifactorial and single gene mutation 2

What is frameshift mutation 2

### **Bio 301 paper.....**





12 aug

36 MCQs

- 37.....difference b/w single gene disorders and multifactorial disorders. 2m
- 38.... what is the location of intronic sequences w/d respect to exons? 2m
- 39....define epigenetics. 2m
- 40.... differentiate b/w RAPD and AFLP. 3m
- 41...differentiate b/w forward, reverse and neutral mutation. 3m
- 42....wt r basic 5 complications in inheritance pattern. 5m
- 43.... wt point mutation? enlist at least 3 variations that occur due to change in the structure of chromosome? 5m
- 44... write a note on epigenetic modification. 10m
- 45..... how mutations alter gene function ? 10m

bio 301 final term 11AM

12 aug

36 MCQs

- 37.....difference b/w single gene disorders and multifactorial disorders. 2m
- 38.... what is the location of intronic sequences w/d respect to exons? 2m
- 39....define epigenetics. 2m
- 40.... differentiate b/w RAPD and AFLP. 3m
- 41...differentiate b/w forward, reverse and neutral mutation. 3m

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- 42....wt r basic 5 complications in inheritance pattern. 5m
- 43.... wt point mutation? enlist at least 3 variations that occur due to change in the structure of chromosome? 5m
- 44... write a note on epigenetic modification. 10m
- 45..... how mutations alter gene function ? 10m

### BIO301 TODAY'S PAPER

- Function of short tandem repeat polymorphism (2)
- Is there any rule for mutation nomenclature? (2)
- Define epigenetics (2)
- Write three causes of epigenesis (3)
- Enlist minimum three mitochondrial diseases (3)
- Write basic complications in inheritance pattern (5)
- Define point mutation. Enlist three variations caused by changes in chromosome. (5)
- Write a note on epigenetic mutations (10)
- How mutations alter protein function (10)

### BIO301 TODAY'S PAPER

- Function of short tandem repeat polymorphism (2)
- Is there any rule for mutation nomenclature? (2)
- Define epigenetics (2)
- Write three causes of epigenesis (3)
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- Write basic complications in inheritance pattern (5)
- Define point mutation. Enlist three variations caused by changes in chromosome. (5)
- Write a note on epigenetic mutations (10)
- How mutations alter protein function (10)

### Bio 301 ...16/8/2017.....8:00 AM

- 1.What is Frameshift mutation? 2
- 2.Define epigenetics? 2
- 3.Diff. B/w single gene disorder and multifactorial disorders? 2
- 4.Enlist three mitochondrial disease? 3
- 5.Name of cause of epigenetics? 3
- 6.what are the basic complications in inheritance pattern? 5
- 7.Define point mutation? Enlist the variations occur through the change in dna structure? 5
- 8.Explain chromosomal aberrations? 10
- 9.How mutation alter the gene functions? 10

### 16 August 301 paper 8 am

- Q1.Define epigenetics.2m
- Q2.Write frequency of dominant inheritance,2 marks

Q3. Define VNTR and write its applications. 5m

Q4. Define point mutation and enlist at least three variations that occur due to change in the chromosome structure. 5

How mutations change the gene function. 10m

How mutation alters gene function. 10

What are chromosomal aberrations. Its types. 10

Define VNTR. And its applications 5

Name 3 mitochondrial diseases. 3

Three causes of epigenetics. 3

Define point mutation. 2

Define frame shift mutation. 2

### Bio 301 final term paper::::

What are chromosomal non-disjunction types, causes. 10

Mutations alter gene function 10

VNTR and its applications 5

Point mutation 5

Causes of epigenetics 3

Write the name of 3 autosomal recessive disorders 3

Dif. b/w multifactorial and single gene mutation 2

What is frameshift mutation 2

### Bio 301 paper

Many papers are given.

Alterations of gene functions

Epigenetics modification

Cause of epigenetics

Epigenetic diseases

Autosomal recessive disease

Complication in inheritance pattern?

### Bio 301 mcqs at 5pm

1 : Variation is induced by genetic and environment factor?

(a) Height

2 : Mendel's work was based on ?

(a) Single gene

(b) Two laws

(c) Both

(d) Three laws

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- 3 : Color of hydrangea plant change on?  
(a) Texture (b) PH (c) composition (d) soil
- 4 : Bacterial chromosomes is present in ?  
(a) Mitochondria (b) Nucleus (c) Nucleoid (d) Nucleolus
- 5 : Bacterial chromosomes is made of :  
(a) DNA (b) Histone (c) Both (d) RNA
- 6 : Chromosomal is unable to work due to mutation in ?  
(a) CDFI (b) CDFII (c) CDFIII (d) CDFIV
- 7 : Okazaki fragment are formed ?  
(a) Discontinuous (b) RNA replication (c) Continuous (d) Conservative
- 8 : If the gene closely related then ?  
(a) Recombination frequency will be constant (b) Recombination frequency will be low  
(c) Recombination frequency will be high (d) Recombination frequency will be interior
- 9 : One map is parallel is produced recombination frequency ?  
(a) 1% (b) 2% (c) 3% (d) 4%
- 10 : location of genes on chromosomes ?  
(a) Synapse (b) Chiasmata (c) Locus (d) Tetrad
- 11 : About 25000 SNA in human are ?  
(a) Non – Synapse
- 12 : Determination of pattern inheritance ?  
(a) Pedigree
- 13 : Types of single nucleotide polymorphism that change the sequence of amino acid ?  
(a) Non – coding
- 14 : Expression of phenotype :  
(a) Incomplete inheritance
- 15 : Small case for alphabets used for ?  
(a) RNA level
- 16 : Frequency of autosomal recessive ?  
(a) 2- 2.5
- 17 : Medelian disorder is :  
(a) Single gene
- 18 : Addition mutation is addition of ?  
(a) Nuclotide
- 19 : Mutation that transfer next generation ?  
(a) Somatic mutation (b) Germ line mutation (c) Forward (d) Reverse
- 20 : Which is one of chromosomal duplication ?  
(a) Retro – transposition
- 21 : Turner syndrome is an example of ?  
(a) Monosomy
- 22 : Suppressor mutation is ?

(a) Double

23 : Gene switch on ?

(a) Deacetylated                      Not confirm

24 : Two genes close together , frequency of crossing over would be ?

(a) Low

25 : Large arm of chromosomes is ?

(a) Q arm

26 : Colchicine to promoter ?

(a) Polyploidy

27 : Histone deacetylation inhibitor ?

(a) Varinostat                      (b) DDT                      (c) Colchicine                      (d) Tetracycline

28 : Polygenic inheritance is controlled by ?

(a) Multiple genes

29 : Fur color in Labrador is controlled by ?

(a) 2 genes

30 : cancer , infertility are result of ?

(a) Translocation

31 : Which is following is not chromosomal aberration ?

(a) Translation

32 : which is result of frame shift ?

(a) Deletion

33 : Which is not true recessive trait ?

(a) Females are more affected

34 : Molecular biology , forensic , genes mapping are application of ?

(a) VNTR

35 : Mutation can occur regulatory region that effect ?

(a) Transcription , translation or splicing of the protein

36 : ‘( Underscore) indicate ?

(a) Arrange of affected residue

Bio301 18august 11am final term

Total que. 45 (Mcq's 36x1 + 3x2 + 2x3 + 2x5 + 2x10)

Mcq's

1. Incomplete dominance, 2. Okazaki fragments are formed in,

3. Phase at which spindle fibre break, a. telophase b. metaphase c. yad ni d. yad ni

4. Primary oocyte produces by,

5. Equational division is, a. metaphase b. telophase c. meiosis I d. meiosis II

6. Sex determination system in fishes a. x-o b. w-z c. x-y d. none

7. Frequency of autosomal recessive per 1000 individual, a. 0.5-2 b. 2-2.5 c. 4-9.5 d. 20-50

8. Small case-alphabets are used for describing mutation at, a. DNA level b. RNA level c. protein level d.

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crbohydrate lvl

9. Addition mutation is the addition of, 10. Turner syndrome is an example of,

11. If two genes are more close, frequency of crossing over will be, a. high b. low c. high and low d. none

12. Colchicine produces, 13. Polygenic inheritance is controlled by,

Short questions ..... What is the function of drawing pedigree? (2m) Write the location of the intronic sequence with respect to exons? (2m) Define Epigenetics? (2m) Differentiate b/w linked and causative nucleotide polymorphism. (3m) Define forward, reverse and neutral mutation. (3

) What is VNTR?

Long questions ..... Give at least its 5 applications. (5m) Write a note on epigenetics modification. (10)

Write a note on mutation altering the gene function. (10m)

Wish all of you best of luck □□□□□

## Bio 301

My today paper bio 301 at 11am

Long questions

1. Complications to inheritance patterns
2. Mutation altering gene function
3. Point mutation and variation structural changes
4. Non-disjunction chromosomes types and causes

Short

Define epigenetics and causes

3. linked and causative SNP
4. Frequency of autosomal dominant disorder
5. frameshift

MCQs mostly mutation topic me sy thy

## Bio 301

Today mine bio301 paper at 8 am

total 47 questions 37 MCQs

define epigenetics 2 structural abnormalities 2 reverse forward and neutral mutations 3 non-disjunction types abnormalities and causes 5 point mutations 10 frameshift mutation 2 mark how mutations can alter gene function 10 autosomal recessive inheritance 5 explain complication

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in inheritance pattern any 5 3 mark  
All the best for exam

## Bio 301

Today mine bio301 paper at 8 am  
total 47 questions 37 mcqs  
define epigenetics 2 structural abnormalities 2 reverse forward and neutral mutations 3 non  
disjunction types abnormalities and causes 5 point mutations 10 frameshift mutation 2 mark  
how mutations can alter gene function 10 autosomal recessive inheritance 5 explain complication  
in inheritance pattern any 5 3 mark  
All the best for exam

Bio (301) today paper  
How mutation alter gene function? 10  
marks

What are point mutations and  
described three chromosomal  
structure changes? 5 marks..? STRP  
function?

Bio 301. 3 march, 2017

1: Define point mutation. 2 marks  
2: Define epigenetics? 2 marks  
3: Define reverse, forward and neutral  
mutation. 3 marks  
Frameshift  
mutation?

Forward, reverse, and neutral  
mutations? 3 genetics disorder?  
Almost all q past paper see thee?

10:51 PM

Today mine bio301 paper at 8 am  
total 47 questions 37 mcqs

define epigenetics 2 structural abnormalities 2 reverse forward and neutral mutations 3 non  
disjunction types abnormalities and causes 5 point mutations 10 frameshift mutation 2 mark  
how mutations can alter gene function 10 autosomal recessive inheritance 5 explain complication  
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All the best for exam