भाग-1

3322355

M

नामांकन संख्या

अनुक्रमांक (अंकों में)

अनुक्रमांक (शब्दों में)

हस्ताक्षर

कक्ष निरीक्षक का नाम

परीक्षार्थी द्वारा सम्पूर्ण विवरण भर लिए गये है।

परीक्षार्थी का पूरा नाम

R

2018- भाग-2

M.Sc. Internal

चौधरी चरण सिंह विश्वविद्यालय, मेरठ
Ch. Charan Singh University, Meerut

निम्नलिखित विवरण परीक्षार्थी द्वारा स्वयं भरा जाए (To be filled by the Examinee)

परीक्षा का नाम..... वर्ष 20 ..... भाग/सेमेस्टर .....
(Name of Exam) (Year 20.....) (Part / Semester)

विषय ..... प्रश्न-पत्र/पाठ्यक्रम..... पेपर कोड नं. .....
(Subject) (Paper /Course) (Paper Code No.)

परीक्षा का दिन..... दिनांक .....
(Day of Examination) (Date)

प्राप्तांक एवं पूर्णांक परीक्षकों द्वारा भरे जायें

पूर्णांक.....
(Max. Marks)

प्रश्नों की क्रम संख्या	a/I	b/II	c/III	d/IV	e/V	f/VI	g/VII	h/VIII	i/IX	j/X	योग
1											
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11											
12											
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14											

प्राप्तांक

(शब्दों में)	अंकों में

जाँचकर्ता के हस्ताक्षर एवं तिथि

परीक्षक के हस्ताक्षर एवं तिथि

2018- भाग-3

R

चौधरी चरण सिंह विश्वविद्यालय, मेरठ

आवश्यक निर्देशों हेतु पृष्ठ भाग देखें

Date Stamp to be affixed here

(परीक्षार्थी द्वारा भरा जाए)

परीक्षा का नाम..... भाग/सेमेस्टर .....

विषय .....

प्रश्न पत्र ..... दिनांक .....

परीक्षार्थी का अनुक्रमांक (Roll Number)

उत्तर-पुस्तिका क्रमांक

KM-I-01-

कालेज कोड

(परीक्षार्थी की श्रेणी)

- संस्थागत
- व्यक्तिगत
- बैक पेपर
- अंक सुधार
- भूतपूर्व
- एकल विषय

नामांकन संख्या (Enrollment Number)

M

पेपर कोड

परीक्षार्थी का पूरा नाम

कक्ष निरीक्षक का नाम

Sec- C

Summary

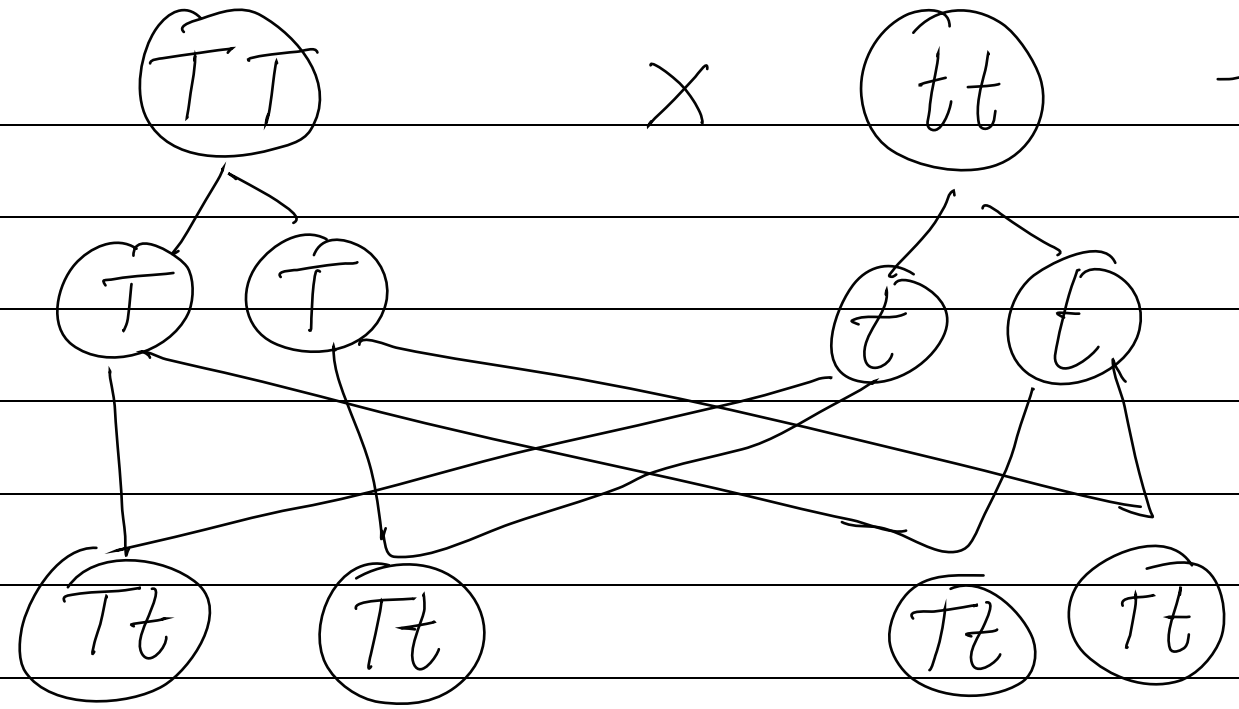
(9)
- about Mendal
- Mendalian principals
- Three principals — ① Law of Dominance
  ② Law of Segrication
  ③ Law of Indipendent Assortment

Gregor John Mendal is Father of genetics.
he was a prist in the monastry in Austia.
he worked on hybrisation experiment on Pea plant (Pisum sativam).

Mendal gave three principals of genetics

1. Law of Dominance
2. Law of Segrication
3. Law of Independent Assortment

1. **Law of Dominance:** when we cross between two homozygous plant for a character. only one character is appear in F_1 generation. which character appear in F_1 generation is called dominant character which character not appear in F_1 generation is called Resessive character.



— Parental generation

— gametogenesis

— heterozygous tall plants

(2) Law of Segrication :-

when we cross between to plant at the time of gametogenesis only one character pass into next generation i.e one character appear in F_1 generation, another character is not lost. that reappear in next generation. because gamete are

always pure. that's also know as law purity of gametes.

TT × tt — Parental gen

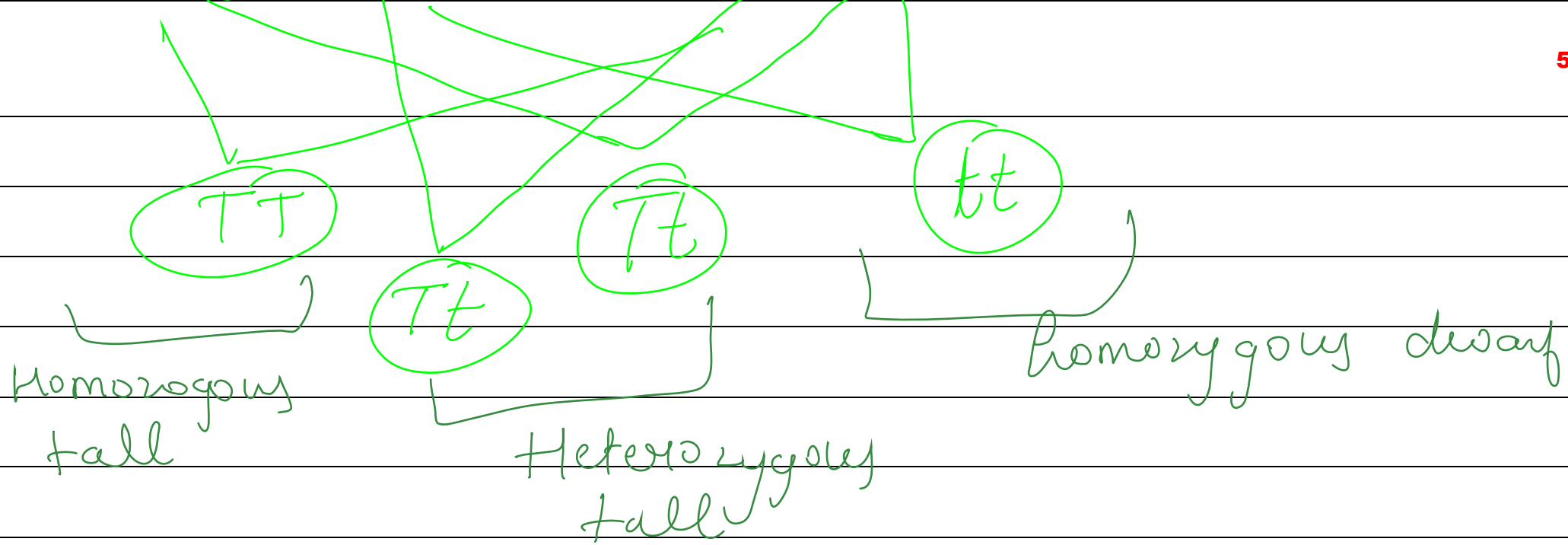
T T t t — gametogenesis.

Tt — all heterozygous plant found in F_1 generation

On the selfing on F_1 generation.

Tt × Tt — Parental g.

T t T t



Phenotypic ratio :- 3 : 1

Genotypic ratio :- 1 : 2 : 1

(3) <u>Law of Independent Assortment</u> :- Inheritance of one character does not affect the Inheritance

of another character.

$TT \times tt$ — P

T T t t

Tt — F_1 generation

on selfing in F_1 generation.

$Tt \times Tt$ — P

T t T t

	T	t
T	TT	Tt
t	Tt	tt

— F_2 generation.

In 1864 mendal's principal published in a local megzene. Three Scientist H.D varies, carl corance, E.V Tesermalce They Rediscovered the mendalian principals in 1901.

Ans 10 Summary

- chromosomal abrration
  - Structural chromosomal abnormality
  - Numerical chromosomal abnormality
- Numerical chromosomal abnormality
  - Euploidy
    - Monoploidy
    - Diploidy
    - polyploidy
  - Anuploidy
    - Nullisomy
    - Monosomy
    - trisomy
    - Tetrasomy.

Chromosomal abnormalities are occured during alteration of genetic Meterial loss or gain of chromosome.

These are generated abnormal cell division during Non-disjunction. Chromosomal abnormalities mainly two type Structural and Numerical.

Numerical chromosomal abnormality: Numerical chromosomal abnormality increase and decrease of no. of chromosome is seen. These are mainly two type.

Numerical chromosomal abbration

- Euploidy
  - Monoploidy
  - Diploidy
  - Polyploidy
- Anuploidy
  - Hypoploidy
    - Nullisomy
    - Monosomy
  - Hyperploidy
    - Trisomy
    - Tetrasomy

Euploidy :- This is a condition of cell tissue or organism in which addition of one or more Entire set of chromosome. its frequently occured in plants not in animals.

divided into three parts:- ① Monoploidy
② Diploidy
③ polyploidy.

Monoploidy :- There is missing of one pair chromosome. another is present. its called haploidy. (n)

② **Diploidy :-** double set of chromosome is present (2n).

(2) Polyploidy :- no. of chromosome found in Multiple form.

Ex. wheat.

Anuploidy :-

changes in chromosomal no. in both autosome chromosome and in sex chromosome 'Increase or decrease of no. of chromosomes. in cell.

These are four type - (1) Nullisomy
(2) Monosomy
(3) Trisomy
(4) Tetrasomy.

① **Nullisomy** :- lack of one pair of chromosome than the normal. (2n-2)

② **Monosomy** :- There are less of one chromosome than the normal. (2n-1)

Ex. Cri-du-chat syndrom (5-group Monosomy).

③ **Trisomy** :- Presence of one extra chromosome than the normal. (2n+1)

Examples. ① Down's syndrom - 21- trisomy
② Edward's syndrom 18- trisomy
③ Patau's syndrom 13- trisomy

(4) Tetrasomy :- Presence of one extra pair of chromosome than the normal (2n+2).

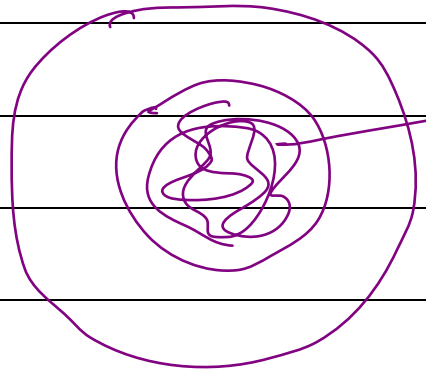
Sec-B

(6) **Polytene chromosome :-**

These are specific chromosomes found Interphase. discovered by E.G. balbiani study on Drosophilla

Poly - many tene - strands

These are specific type of chromosome found in Interphase. which contain thousands of DNA strands. They are very large in size.



chromatin

- Leptotene
- Zygotene
- Pacetene
- Diplotene
- Dikinesy

These stages come in Interphase which show different forms or shape of chromosome.

7)

Heterochromatin	Euchromatin
• Heterochromatin are also know as introns	• Euchromatin also know as Exon.
• Introns are codon which does not code for any protein	• Exon are part or codon which code for protein.
• Introns are also called non-sense codon which does not have sense of any protein.	• These are the coding portion of protein.
• These are Repeated sequences	• Non-repeated sequences

non-coding part	Coding part
Introns are removed in the formation of protein.	Exons are joined by DNA ligase.

SEC-A

① Mendal selected pea plant (Pissum-sativam) for his hybrization experiment. because In pea plant self fertilization possible or occured naturally. and cross-fertilization occured by removing the anthers so, both self or cross fertilization are possible in pea plant. and it short life spum. so, result obtain fastly.

(2) **Initiation codon** :- AUG is a initiation codon which responsiable for starting the protein chain.
AUG code for Methylene.
In prokaryotic cell GUG when came in starting that also code for methylene and initiate the protein chain.
In both protein or aminoacid.

(3) **Gene Bank** :- it collect the DNA sequences at NCBI. (National center of Biotecnology Information.) . it collect DNA sequences and stored them.

(4) PCR :- Polymerase chain reaction.

it's a tecqunce which produce thousands copy of DNA segments from small sample. with in few time. also called photo copy Mechine of DNA.

(5) Split gene :- In gene some genes are exon or coding which code for protein and some gene are non-coding which does not code for any protein.
In this process Introns are removed by Restriction enzyme and exons are joined by DNA ligase. this is called split gene. this occured when mRNA formed from DNA.

that time hnRNA contain both exon and introns. These introns are removed and exons are joined.