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B

F. Y. B Sc. (Sem. - I) Examination

March - 2023

Bioscience (Microbiology) : BS-102

Basic Genetics

સૂચના : / Instructions

(1)

નીચે દર્શાવેલ ☛ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી. **Fill up strictly the details of ☛ signs on your answer book** Name of the Examination: ☛ **F. Y. B Sc. (Sem. - I)** Name of the Subject : ☛ **Bioscience (Microbiology) : BS-102 Basic Genetics** Subject Code No.: **1803000201030112**	Seat No.: Student's Signature

(2) All questions are compulsory.

***O.M.R. Sheet* ભરવા અંગેની અગત્યની સૂચનાઓ આપેલ *O.M.R. Sheet*ની પાછળ છાપેલ છે.**
Important instructions to fillup O.M.R. Sheet are given on back side of the provided O.M.R. Sheet.

Q. 1. A cross between two pure individuals, differing in at least one set of characters, is called

a. Monohybrid
b. Polyploid
c. Mutant
d. Variant

Q. 2. F1 generation means

a. First flowering generation
b. First fertile generation
c. First filial generation
d. First seed generation

Q. 3. In genetics, the use of test cross was done by

a. Mendel
b. Correns
c. Punnet
d. Darwin

Q. 4. Mendel, in his experiments

a. Maintained qualitative records.
b. Maintained quantitative records.
c. Conducted ample crosses and reciprocal crosses.
d. All

Q. 5. Mendel performed

a. Monohybrid cross
b. Tetra hybrid cross
c. Poly hybrid cross
d. All

Q. 6. Mendel always started his experiment (Monohybrid and Dihybrid cross) with

a. Any pea plant
b. A heterozygous plant
c. A pure line plant
d. A fresh new plant

Q. 7. When Mendel allowed monohybrid cross between pure tall and pure dwarf pea plant, he found _____ in Ist generation.

a. All plants were tall.
b. All plants were dwarf.
c. Dwarfness reappeared in some plants.
d. Tallness reappeared in some plants.

Q. 8. Mendel grouped all contrasting characteristics in _____ pairs.

a. 15
b. 14
c. 7
d. 6

Q. 9. In human Karyotype, chromosomes are arranged in _____ group.

a. 3 b. 4

c 7 d. 10

Q. 10. Karyotype prepared from human _____.

a. Lymphocyte b. RBC

c. Neutrophils d. None

Q. 11. Y chromosome belongs to _____ group.

a. A b. D

c. G d. F

Q. 12. Mendel did not propose law of

a. Segregation b. Dominance

c. Incomplete dominance d. Independent assortment

Q. 13. A test cross

a. Is used to determine homozygous or heterozygous.

b. Is used to determine hybrid .

c. Is used to determine homologous.

d. None

Q. 14. RR (red) flowered plant of *Mirabilis* is crossed with rr (white) flowered plant of *Mirabilis*. All the Rr off springs are pink. This is an indication that the R gene is

a. Co dominant b. Recessive

c. Incompletely dominant d. Linked

Q. 15. Multiple alleles of a gene always occupy

a. Different loci on different chromosomes

b. The same position on different chromosome

c. Different loci on a chromosome

d. None

Q. 16. ABO blood grouping is based on

a. Co dominance b. Incomplete dominance

c. Epistasis d. Multiple allelism

Q. 17. In Turner's syndrome the karyotype shows _____.

a. 47 chromosomes (Trisomy of 21).

b. 47 chromosomes (AA+XXY).

c. 46 chromosomes (AA+XY or XX).

d. None

Q. 18. In Klinefelter's syndrome the karyotype shows _____.

a. 47 chromosomes (Trisomy of 21).
b. 47 chromosomes (AA+XXY).
c. 47 chromosomes (Trisomy of 18).
d. 45 chromosomes (AA+XO).

Q. 19. Webbed neck and Barr body negative are the symptoms of _____.

a. Turner's syndrome.
b. Klinefelter's syndrome.
c. Down syndrome.
d. Cat-cry syndrome.

Q. 20. Turner's syndrome is a result of _____.

a. Nullisomy
b. Monosomy
c. Trisomy
d. Polysomy

Q. 21. Chromosome _____ trisomy leads to Edward's syndrome.

a. 12
b. 13
c. 18
d. 21

Q. 22. A child is born with AB blood group, what is the blood group of their parents?

a. Only A
b. Only B
c. A, B, AB and O
d. O

Q. 23. I^A allele responsible for the _____ while I^B for _____.

a. A antigen, B antigen
b. I antigen, I antibody
c. A antibody, B antibody
d. H antigen, D antigen

Q. 24. Which of the following are the properties of gene?

a. Autocatalytic
b. Heterocatalytic
c. Recombination
d. All

Q. 25. A complete set of genes in an organism is called _____.

a. Genes
b. Genotype
c. Genome
d. Genetics.

Q. 26. Concept of gene was first time given by _____.

a. Turner
b. Mendel
c. Morgan
d. Benzer

Q. 27. Self duplication of gene, this property is known as _____.

a. Autocatalytic
b. Heterocatalytic
c. Recombination
d. All

Q. 28. Gene define as

a. A small fragment of DNA responsible for a specific trait
b. Some nucleotides of DNA responsible for a specific trait
c. A piece of DNA fragment responsible for a specific trait
d. All

Q. 29. Normally gene has two form _____ and _____.

a. Dominant, Recessive
b. Trait, Character
c. Allele, Morph
d. None

Q. 30. Which of the following is an example of trisomy _____.

a. Endosperm
b. Klinfelter
c. Turner
d. Xeroderma

Q. 31. Beedle and Tatum discovered the _____.

a. One gene-one protein hypothesis
b. One gene-one enzyme hypothesis
c. One gene-one peptide hypothesis 21
d. None

Q. 32. Gene which can move from one locus to another in same or homologous chromosome is called _____.

a. Altered gene
b. Jumping gene
c. Lethal gene
d. None

Q. 33. Gene Splicing is a removal of _____ from m-RNA.

a. Introns
b. Exons
c. Both Introns and Exons
d. None

Q. 34. The first scientific explanation regarding inheritance was given by

a. William Bateson
b. Johannsen
c. Griffith
d. Mendel

Q. 35. Who is known as "Father of Genetics"?

a. Theophrastus
b. Stephen Hales
c. Aristotle
d. None

Q. 36. A study of inheritance of an organism is known as _____.

a. Genome
b. Genetics
c. Genotype
d. Gene

Q. 37. Organisms produced by sexual reproduction are called

a. Genes
b. Clones
c. Characters
d. None

Q. 38. Offspring are

a. Exactly identical to either of their parents.
b. Exactly identical to their parents.
c. Show intermediate characters inherited from both the parents.
d. None

Q. 39. The term "factor" for gene was coined by

a. William Bateson
b. Johann Mendel
c. Johannsen
d. F.Griffith

Q. 40. Mendel discovered

a. Law of inheritance
b. Law of codominance
c. Law of incomplete dominance
d. All

Q. 41. The botanical name of garden pea is

a. *Pisum sativum*
b. *Lathyrus odoratus*
c. *Mangifera indica*
d. *Solanum tuberosum*

Q. 42. Which of the following is a character in pea?

a. Wrinkled seeds
b. Inflated pod
c. Terminal flower
d. All

Q. 43. Which of the following character was not considered by Mendel?

a. Seed coat color
b. Wrinkled or round leaves
c. Tallness or dwarfness
d. Position of flower

Q. 44. An inherited character and its detectable variant is called

a. Allele
b. Trait
c. Gene
d. None

Q. 45. Which one of the following best describes a gene?

a. A triplet of nucleotide bases.

b. A specific length of DNA responsible for the inheritance and expression of the character.

c. A specific length of single stranded RNA.

d. All

Q. 46. Recessive allele means

a. An allele that prevents the expression of the other allele.

b. An allele without any effect.

c. An allele which cannot express in presence of other.

d. None

Q. 47. The external appearance of an individual for any trait is called as

a. Phenotype b. Karyotype

c. Morphology d. Physique

Q. 48. Genome is

a. Genetic constitution of an organism.

b. Genetic constitution of somatic cells.

c. Genetic constitution of plastids.

d. Genetic constitution of germ cells.

Q. 49. Homozygous individuals

a. Hybrid for the trait.

b. Does not breed true to the trait.

c. Produce only one type of gamete.

d. All

Q. 50. Which of the following term indicates a pair of dissimilar alleles?

a. Homozygous b. Heterozygous

c. Homologous d. All

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SPACE FOR ROUGH WORK