BRAINWARE UNIVERSITY

Term End Examination 2021 - 22
Programme – Bachelor of Science (Honours) in Agriculture
Course Name – Fundamentals of Genetics
Course Code - CC-BAG271(T)
(Semester II)

Time allotted : 1 Hrs.5 Min. **Full Marks : 50**

[The figure in the margin indicates full marks.]

Group-A

(Multiple Choice Type Question) 1 x 50=50

Choose the correct alternative from the following :

(1) With complete dominance and equal survival of all genotypes, the genes in F2 in a monohybrid cross segregate into-

a) 3:1 b) 1:2:1

c) 1:2 d) None of these

(2) Theory of Pangenes was proposed by-

a) Lamarck b) Wolff

c) Charles Darwin d) August Weismann

(3) The jumping gene was first discovered by-

a) Johannsen b) Morgan

c) Barbara McClintock d) Benzer

(4) In case of Incomplete Dominance, if a cross between red and white flowered plants produced plants with intermediate flower colour i.e. pink colour in F1 and F1 plant is self crossed, then what percentage of pink colour flowering plant would be expected in F2 progeny?

a) 0.25 b) 0.5

c) 0.75 d) None of the above

(5) In case of Lethal gen, Mendelian segregation ratio would be-

a) 2:1 b) 3:1

c) 1:1:1 d) 4:0

(6) How you can estimate the phenotypic ratio for trihybrid cross if you know the ratio for monohybrid cross is 3:1 ?

a) By multiplying the ratio with 3 b) By multiplying the ratio itself 2 times

c) By multiplying the ratio itself 3 times d) None of these

(7) If one gene effects more than one characters, then such type of gene is called-

a) Lethal genes
b) Poly gene
c) Multiple alleles
d) Pleiotropic gene

(8) Under monohybrid cross, the genotypic ratio in F2 would be_____if it derived from the selfing of F1-

a) 1:2:1
b) 3:1
c) 1:1
d) 2:2

(9) Incase of Multiple allelism, if the numbers of alleles is (n) then the number of possible genotype would be-

a) 1/2n (n+1)
b) 2n
c) n (n+1)
d) None of these

(10) Shell Coiling in Snail (Limnaea pregra) is an example of Cytoplasmic inheritance. If a male snail having dextral (DD) coiling is crossed with a female snail having sinistral (dd) coiling, what you will expect in F1 snail having-

a) All are dextral
b) All are sinistral
c) 50% of each are dextral and sinistral
d) None of these

(11) Lack of chlorophyll synthesis (Albino) in some plants is due to expression of a gene in ..... condition to be Lethal-

a) Heterozygous doinant
b) Homozygous dominant
c) Homozygous recessive
d) Hemizygous dominant

(12) Lack of chlorophyll synthesis (Albino) in some plants is a typical example of-

a) Over dominance
b) Mendelian inheritance
c) Multiple Allelism
d) Lethal gene

(13) Hemophilia in human is a typical example of-

a) Sex Linked Inheritance
b) Sex Influenced Inheritance
c) Sex Limited Inheritance
d) Crisscross Inheritance

(14) Holandric genes are basically-

a) Y-linked genes
b) Present only in Male
c) Both of the above
d) X-linked genes

(15) Chromatin is basically consist of DNA fiber and Histone protein. This protein has total unique subunits of-

a) 2
b) 4
c) 6
d) 8

(16) The term chromosome was coined by-

a) Strasburger
b) Waldeyer
c) Darlington
d) Balbiani

(17) If sexual orientation of an organism is XX-XO type, then the condition is known as

a) Male Heterogamety
b) Male Homogamety
c) Female Heterogamety
d) Female Homogamety

(18) In case of fruit fly , the ratio of the chromosomes X/A = 1, then the individual would be-

a) Male
b) Female
c) Gynandromorph
d) Meta Female

(19) The inability of an allele to manifest its phenotype in heterozygous condition -

a) Dominance
b) Recessive
c) Co-dominance
d) Overdominance

(20) Who is the pioneer for the development of dwarf wheat and known as father of green revolution-

a) H. de Vries
b) R. Brown
c) M.S. Swaminathan
d) N. Borlaug

(21) If the F1 hybrid is further crossed with its any one of its parental individual, the process is known as-

a) Selfing
b) Testcross
c) Reciprocal cross
d) Back cross

(22) Increasing in the number of chromosome in a set leads to abnormality is known as -

a) Hypoploidy
b) Hyperploidy
c) Euploidy
d) None of these

(23) Which one of the codon is considered as Initiation Codon-

a) UGA
b) UAA
c) UAG
d) AUG

(24) A protein that can be bind to DNA or RNA and inhibit the expression of a gene is known as-

a) Suppressor
b) Repressor
c) Enhancer
d) Terminator

(25) Proteins are composed of _____different amino acids-

a) 16
b) 64
c) 20
d) 4

(26) Who won the noble prize for Operon hypothesis?

a) Baltimore
b) Temin
c) Jacob & Monad
d) Britten

(27) If amount Guanine is 35% in a DNA then what will be the amount of Adenine base? (BHU-entrance)

a) 0.35
b) 0.7
c) 0.15
d) 0.3

(28) Meiosis is also known as-

a) Equational division
b) Homotypic division
c) Reduction division
d) All of these

(29) In mitosis, chromosomes are arranged at equatorial plane during-

a) Prophase
b) Metaphase
c) Anaphase
d) Telophase

(30) If one extra chromosome is found in human in following fashion -(2n+1), then the condition is known as-

a) Euploid
b) Monosomic
c) Trisomic
d) Tetrasomic

(31) In meiosis, syneptonemal complex develops during-

a) Leptotene
b) Zygotene
c) Pachytene
d) Diplotene

(32) Tryptophan operon is a-

a) Positive operon
b) Negative operon
c) Sometimes as positive and sometimes negative
d) Always Neutral

(33) Which of the following amino acids are aromatic in nature?

a) Aspartic acid and glutamic acid
b) Proline and histidine
c) Lysine and arginine
d) Phenyl alanine and tyrosine

(34) Okazaki fragments is basically-

a) The strand that is used as template for continuous DNA synthesis
b) The strand that is used as template for discontinuous DNA synthesis
c) The strand that is synthesized discontinuously by using Lagging strand as a template
d) Small fragment of RNA attached initially with the help of primase for DNA syntheisis

(35) Incase of turner syndrome the basic chromosome number is changed to-

a) 45
b) 46
c) 47
d) 48

(36) Lac operon is the best example of

a) Inducible operon
b) Attenuation
c) Repressible operon
d) Both Inducible and Repressible operon

(37) In which case gene only transfer from maternal rather than paternal parents and don't obey the rule of Mendelian inheritance

a) Polygenic inheriatance
b) Epistatic interaction
c) Linkage
d) Cytoplasmic inheritance

(38) In S phase of cell cycle the actaul function takes place is

a) Cytokinesis
b) Karyokinesis
c) Nuclear Replication
d) Protein Translation

(39) The condition in tetrasomy can be arithmatically represented as

a) (2n-1)
b) (2n+1)
c) (2n+1+1)
d) (2n-1-1)

(40) Under Meiosis, pairing of homogous chromosome (Synapsis)takes place in following which stage-

a) Leptotene
b) Zygotene
c) Pachytene
d) Diplotene

(41) DNA application in Eukaryoites is mostly happened in the following fasjion

a) Dispersive
b) Conservative
c) Semi conservative
d) Both Conservative and Semiconservative manner

(42) The genetic distance among any two genes situated within a chromosome is measured by

a) Map Unit
b) Centimorgan
c) Both Map unit and Centimorgan
d) Crossing over

(43) How many laws of heredity have been established?

a) 1
b) 2
c) 3
d) 4

(44) The tendency of genes to remain togatherin the same chromosome is known as

a) Crossing over
b) Recombination
c) Linkage
d) None of these

(45) Who coined the term linkage?

a) Correns
b) Mendel
c) Morgan
d) de Vries

(46) Who introduced chromosomal theory of inheritance?

a) Mendel
b) Sutton
c) Reginald
d) Boyen

(47) Female heterogamety is_____

a) Two different types of gametes are produced by females
b) Four different types of gametes are produced by males
c) Can be both (a) and (b)
d) (d) None of these

(48) All of the following are part of an operon except_____

a) structural genes
b) a promoter
c) an enchancer
d) an operator

(49) AGGTATCGCAT is sequence from the coding strand of a gene. What will be the corresponding sequence of the transcribed mRNA?

a) ACCUAUGCCU
b) AGGUAUCGU
c) UGTUTCGCAT
d) UCCAUAGCGUA

(50) The experimental proot for semi-conservative replication of DNA was first shown in a_____

a) Plants
b) Fungus
c) Bacterium
d) Virus