Paper Code - 3624

B.Sc. Semester-III
July-September-2021
CC-I-4 GENETICS AND ANALYTICAL TECHNIQUES

કુલ સમય :– ૬૦ મીનીટ કુલ પ્રશ્નો : ૫૦ વિદ્યાર્થીએ ટીક કરવાના પ્રશ્નો : ૩૫

નોંધ : વિદ્યાર્થીએ માત્ર ૩૫ પ્રશ્નો જ ટીક કરવાના રહેશે. જો વધારે ટીક કરેલ હશે તો પ્રથમ ૩૫ પ્રશ્નો જ ગણતરીમાં લેવામાં આવશે.

(1) The crossing of F1 to homozygous recessive parent is called as
a) Test cross b) Backcross c) F1 d) all of these

(2) The eye color of drosophila is
a) Autosomal b) X linked c) Co dominant d) Y linked

(3) which of the following is not ionizing radiation are
a) Cosmic rays b) U V rays c) X rays d) visible ray

(4) Mutational event, when adenine replaced by guanine is a case of
a) Transcription b) Transition c) Transversion d) frame shift mutation

(5) Gene mutation occur at time of
a) DNA replication b) DNA repair c) cell division d) RNA transcription

(6) The alternate form of a gene is
a) Alternate type b) Allele c) Recessive character d) Dominant character

(7) Who coined the term linkage?
a) Morgan b) Morsan c) Wilson d) Mendel

(8) The genotypic ratio of a monohybrid cross is
a) 9:3:3:1 b) 2:1:1 c) 3:1 d) 1:2:1

(9) Complete linkage is observed in
a) Male drosophila b) Maize c) Female drosophila d) None of these

(10) What is epistasis?
a) Type of linkage b) Masking or modifying gene effect
c) Upper portion of a chromosome d) Group of genes

(11) Point mutation involves
a) Insertion b) Deletion c) Change in single base pair d) Duplication

(12) The geometrical device that help to find all possible combination of male and female gamete is called------
a) Batson square b) Mendel square c) Morgan square d) Punnete square

(13) The Phenomenon of two or more than two genes affecting the expression of each other is called as----------
a) Gene interaction b) Crossing over c) Pairing d) Linkage

(14) Point mutation involves
a) Deletion b) Duplication c) Insertion d) Change in single base pair

(15) Which of the following is an ionizing radiation
a) UV rays b) X rays c) Cosmic rays d) Alpha rays

(16) Transition type of mutation occur when,
a) GC replaced TA b) AT replaced CG c) CG replaced GC d) AT replaced GC

(17) The action of ultra violet radiation on DNA to induce mutation is
a) Methylation of base pair b) Formation of thymine dimmers
c) Addition of base pair d) Deletion of base pair

(18) How many phenotypes can occur in the human blood group ABO with alleles $I^A I^B$ i?
a) 2 b) 4 c) 3 d)1

(19) Which of the following is genetic disease
a) Phenylketonuria b) Cataract c) Blindness d) Leprosy

(20) The number of chromosome in turner's syndrome
a) 44 b) 42 c) 45 d) 43

(21) Person with trisomic for twenty first pair of chromosome
a) Down's syndrome b) Turner's syndrome c) Klinefelter's syndrome d) None of these

(22) In Drosophila, gene for white eye mutation is also responsible for de pigmentation of body parts
a) Pleiotropic gene b) Oncogene c) Epistatic gene d) Hypostatic gene

(23) Which of the following techniques would be most useful to identify and quantify the presence of a known impurity in a drug substance?
a) HPLC b) NMR c) MS d) IR

(24) In mutational event , when adenine is replaced by guanine
a) Transcription b) Transition c) Transversion d) Frame shift mutation

(25) A hereditary disease that never pass from father to son
a) X-linked b) Y-linked c) Autosomal d)None of these

(26) A man homozygous for brown color marries a lady heterozygous for brown color is dominant. What will be the chance of their children?
a) Two brown b) Three brown c) All brown d) None of these

(27) Which of the following wavelength ranges is associated with UV spectroscopy?
a) 380 - 750nm b) 200-400 nm c) 0.8-500 nm d) o.01 -10 nm

(28) Which radiation source has electrode in its construction?
a) Hydrogen discharge lamp b) Tungsten lamp c) Xenon Discharge Lamp d) Mercury lamp

(29) Which of the following assays could not be performed by gas chromatography?
a) Analysis of intravenous sodium chloride infusion
b) Measurement of drugs and metabolites in biological fluid
c) Characterization of volatile oils
d) characterization of raw materials for drug synthesis

(30) Ion exchange chromatography is used for the separation of
a) Non polar molecule b) Polar molecule c) Both of above d) None of above

(31) What is role of slit in uv-visible spectroscopy?
a) Polychromatic radiation to monochromatic radiation.
b) Monochromatic radiation to polychromatic radiation
c) A and B
d) None of this

(32) Chromatography is generally used for the separation of mixtures based on the differences in their
a) Structure b) Size c) Shape d) All of above

(33) Which chromatography depends on the highly specific interactions between pairs of biological materials such as enzyme-substrate?
a) Affinity chromatography b) Ion-exchange chromatography
c) Gel permeation chromatography d) Adsorption chromatography

(34) In which chromatography stationary phase is more polar than mobile phase?
a) Liquid-liquid chromatography b) Reversed chromatography c) Ion exchange d) None of the above

(35) HPLC is a short form of
a) High profit liquid chromatography b) High pressure liquid chromatography
c) High profit low chromatography d) High performance low chromatography

(36) What is the principle of the paper chromatography?
a) Adsorption b) Partition c) Both A and B d) None of above

(37) How much time is required to saturate the chamber?
a) 24 hour b) 12 hour c) 6 hour d) 10 hour

(38) Which type of filter paper is mostly used in paper chromatography?
a) Sample paper b) Filter paper c) Whatman filter paper d) Butter paper

(39) In gel filtration chromatography, separation of proteins are based on their
a) Size and shape b) Shape and net charge c) Size and net charge d) Size and specific affinity

(40) Which temperature is required for activation of plate in TLC?
a) 130-149 °C b) 150-160 °C c) 120-130°C d) 110-120°C

(41) Which instrument is used to measure the absorbance of colored compound in solution ?
a) Colourmeter b) Colorimeter c) Coulometer d) Calorimeter

(42) According to Beer-Lambert Law, on which of the following does not depend on absorbance?
a) Distance that light travelled b) Color of solution c) Extinction coefficient of sample d) Solution concentration

(43) Which lamp is used as light source in Visible Spectrophotometer?
a) Tungsten Lamp b) Deuterium Lamp c) LED Lamp d) Prism

(44) Beer's Law states that the intensity of light decreases with respect to the----
a) Volume b) Distance c) Concentration d) Composition

(45) Which mixture is separed and analyzed by chromatography?
a) Viscous mixtures b) Metals c) Simple mixtures d) Complex mixtures

(46) Application of X-ray crystallography is_____
a) Quantitative estimation b) 3-D structure determination c) Qualitative estimation d) All of the above

(47) Ion exchange chromatography is based on
a) Electrostatic attraction b) Adsorption chromatography
c) Electrical mobility of ionic species d) Partition chromatography

(48) Which mouse is lethal?
a) Homozygous white b) Heterozygous agouti c) Homozygous lack d) Homozygous yellow

(49) Thin Layer Chromatography is
a) Adsorption chromatography b) Partition chromatography
c) Electrical mobility of ionic species d) None of above

(50) Who is known as father of Genetics?
a) Mendel b) Watson c) Morgan d) Bateson