BRAINWARE UNIVERSITY

Term End Examination 2021 - 22
Programme – Bachelor of Science in Medical Radiology & Imaging Technology
Course Name – Animal Biotechnology
Course Code - GEBT401
(Semester IV)

Time allotted : 1 Hrs.15 Min. **Full Marks : 60**

[The figure in the margin indicates full marks.]

Group-A

(Multiple Choice Type Question) 1 x 60=60

Choose the correct alternative from the following :

(1) The growth of animal cells in vitro in a suitable culture medium is called_____
a) Gene expression b) Transgenesis
c) Plant tissue culture d) Animal cell culture

(2) Cells from kidney tissues cannot survive independently, it requires other surface for attachment a nd survival.
a) anchorage dependent b) anchorage independent
c) Suspention dependent d) Suspention independent

(3) Name the type of culture which is prepared by inoculating directly from the tissue of an organis m to culture media?
a) Secondary cell culture b) Primary cell culture
c) Cell lines d) Transformed cell culture

(4) Name the organism on which first cell line was observed
a) E.Coli b) Sheep
c) Mouse d) Monkey

(5) Which of the following is the characteristics of a normal cell?
a) Anchorage independent b) Continuous cell lines
c) Dependent on external growth factor d) No contact inhibition

(6) Name the cell line of the human embryonic lung?
a) HeLa b) WISH
c) L d) MRC-5

(7) Which of the following is NOT the part of growth medium for animal culture?
a) Starch b) Serum
c) Carbon d) Inorganic salts

(8) Which of the following is NOT the major function of the serum?
a) Promotion of tuber and bulb formation b) Enhance cell attachment
c) Provide transport proteins d) Stimulate cell growth

(9) The limited replicative capacity of human cells in culture is called

a) Brownian effect
b) Contact inhibition
c) Adherent cells
d) Hayflick effect

(10) Which of the following is HGPRT+ and survives in HAT medium

a) B cells
b) Myeloma cells
c) Hybrid cells
d) Both a and c

(11) Cell culture technique became simpler only after advent of

a) Antibiotics
b) Trypsin
c) Cell culture media
d) All

(12) Which of the following is true regarding animal cell culture technique

a) Lactic acid is source of carbon
b) Cells have high requirement of L-glutamine
c) Cholin is necessary for cell adhesion and cytoskeleton
d) all

(13) Which of the following is the structural fibre in cell culture system

a) Collagen
b) Elastin
c) Both a and b
d) Fibronectin

(14) Optimum pH required for the growth of mammalian cells is

a) 5.3-7.0
b) 6.5-7.0
c) 7.2-7.4
d) 8.1-8.9

(15) For culture of avian cells the optimum temperature requirement is

a) 37℃
b) 40℃
c) 42℃
d) None

(16) Which of the following is the oldest cell line

a) HeLa cells Lines
b) Vero cell line
c) CHO cell line
d) BHK cell line

(17) Which of the following is most commonly used cell fusing agent

a) PEG
b) $NaNO_3$
c) Sendai virus
d) Polyvinyl alcohal

(18) Which of the following virus is used for cell fusion

a) Sendai virus
b) Herpes virus
c) Myxovirus
d) All

(19) Which of the following is easy and rapid method to interpret viability of cells in culture system

a) Trypan blue dye exclusion
b) Neutral red assay
c) Fluorescein dye assay
d) all

(20) Animal cell cultures are used widely for the production of

a) insulin
b) somatostatin
c) mabs
d) thyroxine

(21) The first vaccine developed from animal cell culture was

a) Hepatitis B vaccine
b) Influenza vaccine
c) Small pox vaccine
d) Polio vaccine

(22) Which of the following are commonly produced in animal cell cultures

a) Interferon
b) mab
c) vaccines
d) all of these

(23) The cell line used for the production of polio vaccine was

a) Primate kidney cell line
b) CHO cell line
c) Dog kidney cell line
d) mouse fibroblast cell line

(24) Recombinant proteins are

a) proteins synthesized in animals
b) proteins synthesized by transgene in host cell by r DNA technology
c) proteins synthesised in cells that are produced by protoplast fusion
d) proteins synthesized in mutated cell lines

(25) Interferons are

a) anti bacterial proteins
b) anti-viral proteins
c) bacteriostatic proteins
d) all

(26) The virus commonly used to infect cell cultures for the production of interferon is

a) Sendai virus
b) Polio virus
c) Corona virus
d) Small pox virus

(27) Hybrid antibodies are

a) antibodies produced in cell cultures
b) antibodies designed using rDNA technology prod uced in cell cultures
c) antibodies produced in invivo
d) both a and b

(28) The technique used in animal biotechnology for the rapid multiplication and production of anima ls with a desirable genotype is

a) protoplast fusion and embryo transfer
b) hybrid selection and embryo transfer
c) In vitro fertilization and embryo transfer
d) all

(29) The first successfully cloned animal was

a) Monkey
b) Gibbon
c) Sheep
d) Rabbit

(30) In humans, the babies produced by in vitro fertilization and embryo transfer was popularly called as

a) invitro babies
b) test tube babies
c) invitro-invivo babies
d) all

(31) Which of the following is a ‘defined media’?

a) Synthetic media
b) Crude media
c) Simple media
d) Complex media

(32) Chemicals used for gene transfer methods include

a) Poly ethylene glycol
b) CaCl2
c) Dextran
d) All

(33) Introduction of DNA into cells by exposing to high voltage electric pulse is

a) lectrofusion
b) Elctrofision
c) Electroporation
d) Electrolysis

(34) The transformation method that uses tungsten or gold particle coated with DNA accelerated at hi gh velocity is called

a) Acceleration method
b) High velocity method
c) Particle gun delivery method
d) DNA particle delivery method

(35) DNA solution injected directly into the cell using micromanipulators is called

a) macroinjection
b) micromanipulator mediated DNA delivery
c) microfection
d) microinjection

(36) Which of these established cell lines originate from a mouse embryo?

a) 3T3
b) BHK
c) HeLa
d) BTK

(37) The nucleous of mature unfertilized ovum may be removed by

a) irradiation
b) surgery
c) both (1) and (2)
d) neutralization and homogenization

(38) Karyoplast is

a) cells devoid of cell wall
b) nuclei
c) nuclei with only some residual plasma membrane
d) cell with nucleus

(39) The success of embryo transplantation depends upon the ability to obtain an increased number of embryos from animals of superior genetic merit, which can be achieved by the use of

a) exogenous gonadatrophic hormones
b) endogenous gonadatrophic hormones
c) both (1) and (2)
d) FSH (Follicle Stimulating Hormone)

(40) The technique, mainly used for the diagnosing birth defects in the fetus by means of needle, is called

a) amniocentesis
b) ectogensis
c) transplantation
d) all of the above

(41) Anthrax is caused by

a) Clostridium
b) Bacillus
c) Mycoplasma
d) None

(42) Cloning is a method by which numbers of genetically identical organisms are derived from a single organism by

a) vegetative propagation
b) vegetative initiation
c) vegetative termination
d) None

(43) Which of the following is/are the method of transfection for making transgenic animals?

a) Transfer of whole nuclei
b) Transfer of whole individual chromosomes or fragment
c) Transfer of DNA
d) All of the above

(44) DNA microinjection into the egg has been used to produce which of the following transgenic animals?

a) Mice
b) Chicken
c) Pigs
d) All

(45) Transgenic goats produce a variant of human tissue type plasminogen activator protein in

a) blood
b) urine
c) milk
d) muscles

(46) Which of the following statements best describes a clone?

a) An artificial life form
b) An offspring where all of the genetic material in every cell is identical to that of both parents
c) An offspring where all of the genetic material in every cell is identical to that of one of its parents
d) A type of sheep

(47) In transgenic fish, the genes are introduced by

a) microinjection
b) viruses
c) transfer of whole nuclei
d) all of these

(48) Production of transgenic animals require transfections of

a) eggs or embryos
b) stem cells
c) red blood cells
d) all

(49) Which of the following gene have been introduced into the transgenic fish?

a) Human or rat gene for growth hormone
b) Chicken gene for delta crystalline protein
c) E. coli gene for β-galactosidase
d) all

(50) Which protein has been produced generating a transgenic sheep that is used for replacement therapy for individuals at risk from emphysema?

a) Plasminogen activator (tPA)
b) α-anti trypsin (AAT)
c) Casein
d) Amyloid precursor proteins

(51) Transfection refers to which of the following?

a) Synthesis of mRNA from DNA template
b) Introduction of foreign gene in to a cell

c) Synthesis of protein based on mRNA sequence
d) The process by which a cell become malignant

(52) Trypanosomiasis is caused by

a) Bacteria
b) viruses
c) Protozoa
d) Mycoplasma

(53) Theileriosis is caused by

a) Symbiotic sps
b) saprophytic sps
c) Parasites
d) None

(54) Sickle cell anaemis is a type of disease linked with

a) autosomal
b) Sex chrmosome recessive
c) Sex linked dominant
d) None

(55) Which process is used to insert normal genes into human cells to correct disorders?

a) Gene therapy
b) Live vector vaccines
c) Molecular cloning
d) Stem cell therapy

(56) Most current gene therapy trials target

a) SCID deficiency
b) Cancer
c) Cystic fibrosis
d) HIV

(57) Which of the following is an example of a condition caused by a mutation in a single gene?

a) Colon cancer
b) Heart disease
c) AIDS
d) Cystic fibrosis

(58) Among animals and humans, clones appear naturally in the form of

a) Siblings
b) Identical twins
c) Older siblings
d) Germ lines

(59) Lentivirus and Retrovirus are related.

a) Yes
b) NO
c) none
d) different

(60) Which best describes the process of gene therapy?

a) Functional genes are inserted into the reproductive cells in order to fix ailments in the next generation.
b) The chromosome with the faulty gene is replaced by a fully functional, working copy.
c) Viral vectors are used to replace nonfunctional genes with working copies.
d) None