



BRAINWARE UNIVERSITY

Term End Examination 2021 - 22

Programme – Bachelor of Science in Medical Lab Technology

Course Name – Applied Clinical Biochemistry

Course Code - BMLT403

(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 main hormone secreted by the Thyroid gland

a) T4	b) T3
c) (a) and (b) Both	d) TSH
- (2) A condition of a chronic inflammation of the thyroid, which lead to under activity?

a) Goitre	b) Thyroiditis
c) Hypothyroidism	d) Hyperthyroidism
- (3) Name the condition marked by a low TSH?

a) Hypothyroidism	b) Hyperthyroidism
c) Goitre	d) Thyroid Cancer
- (4) The four small glands in the thyroid gland are known as

a) Adrenal gland	b) Pineal gland
c) Parathyroid gland	d) Endocrine and exocrine gland
- (5) Medications for hypothyroidism include treatment that:

a) Replaces insulin	b) Replaces ADH
c) Replaces TH	d) Replaces surfactant
- (6) The main cell type which produces CSF is the

a) Astrocyte	b) Basket Cell
c) Ependymal Cell	d) Purkinje Cell
- (7) The main compartments which hold CSF in the brain are called

a) Arteries Cavities	b) Chambers
c) Jim	d) Ventricles

- (8) The lateral ventricles are connected to the third ventricle via
- | | |
|---|--|
| a) Cerebral Aqueduct (of Sylvius) | b) Medial Aperture (Foramen of Magendie) |
| c) Interventricular foramina (of Monro) | d) Ependymal Canal |
- (9) CSF is resorbed by the
- | | |
|---------------------------|---------------------|
| a) Arachnoid granulations | b) Con granulations |
| c) Dura granulations | d) Pia granulations |
- (10) The most abundant material present on CSF will be
- | | |
|--------------|--------------|
| a) Magnesium | b) Potassium |
| c) Calcium | d) Chloride |
- (11) In Bacterial meningitis CSF appears
- | | |
|--------------|------------------|
| a) Turbid | b) Clear |
| c) Yellowish | d) None of these |
- (12) In Viral meningitis the predominant cell in CSF is
- | | |
|---------------|---------------|
| a) Monocyte | b) Lymphocyte |
| c) eosinophil | d) Nutrophil |
- (13) Otorrhea related to
- | | |
|-----------------------------|------------------------------|
| a) leakage of CSF from ear | b) leakage of CSF from urine |
| c) leakage of CSF from nose | d) leakage of CSF from brain |
- (14) Name the Indications for laboratory investigation of CSF?
- | | |
|-------------------|---------------------------|
| a) CNS infection | b) Demyelinating diseases |
| c) CNS Malignancy | d) All of these |
- (15) In the Biochemical analysis of CSF we are interested in which of the following?
- | | |
|-------------|--------------|
| a) Albumin | b) Potassium |
| c) dopamine | d) glucose |
- (16) During a lumbar puncture the doctor has noticed that the specimen was red in the beginning then it changes latter, which on of the following could explain this?
- | | |
|--|---|
| a) the patient has Subarachnoid hemorrhage (SAH) | b) he has injured a blood vessel during the needle insertion "Traumatic tap |
| c) this is normal | d) None of these |
- (17) What should you do with the remnant of a CSF specimen ?
- | | |
|-----------------------------------|------------------|
| a) preserve it with fluoride ion | b) get rid of it |
| c) preserve it with anticoagulant | d) None of these |
- (18) Xanthochromia causes
- | | |
|-------------------------|----------------------------|
| a) Bacterial meningitis | b) Subarachnoid hemorrhage |
| c) Taumatic tap | d) Viral meningitis |
- (19) CSF Protein is determined by
- | | |
|-------------------------------|-----------------------------|
| a) Electrophoretic seperation | b) Spectrophotometric study |
| c) PCR | d) Chromatography |
- (20) In which condition is lumbar puncture not helpful in diagnosis?
- | | |
|---------------|-----------------------|
| a) Meningitis | b) Epilepsy |
| c) TB | d) Multiple sclerosis |
- (21) At which spinal vertebral interspaces level is lumbar puncture not performed?

- c) A heat-stable DNA polymerase
 (34) Why are vent polymerase and Pfu more efficient than the Taq polymerase?
 a) Because of proofreading activity
 c) Both a and b
 (35) Which of the following is true for asymmetric PCR?
 a) Used for generating double-stranded copies for DNA sequence
 c) Both a and b
 (36) Reverse transcription PCR uses _____.
 a) RNA as a template to form DNA
 c) DNA as a template to form ssDNA
 (37) At what temperature does annealing of DNA and primer take place?
 a) 54°C
 c) 42°C
 (38) Primers used for the process of polymerase chain reaction are _____.
 a) Single-stranded RNA oligonucleotide
 c) Double-stranded RNA oligonucleotide
 (39) How many DNA duplexes are obtained from one DNA duplex after 4 cycles of PCR?
 a) 8
 c) 32
 (40) What is the process of binding of primer to the denatured strand called?
 a) Renaturation
 c) Denaturation
 (41) Which of the following is a mismatch?
 a) Polymerase – Taq polymerase
 c) Primer – oligonucleotide
 (42) What is the function of a primer?
 a) to identify the particular region of DNA to be copied by PCR.
 c) To create DNA nucleotides
 (43) If the primer sequence is TCG, what section of DNA will it anneal?
 a) AGC
 c) GAC
 (44) In sequential step what are the three main steps of PCR
 a) Anneal primer, extend primer, danature DNA
 c) denature DNA, Annealing, extend primer
 (45) After centrifugation, the supernatant being pipetted out contains ____
 a) Water
 c) Cellular debris
 (46) In DNA extraction, _____ is included for chelating the _____ ions needed for enzymes _____ to prevent degradation of DNA.
 a) Chelating agent, Mg²⁺, ribonuclease
 b) All of the these
 b) Because of more efficient polymerase activity
 d) None of these
 b) Used for generating single-stranded copies for DNA sequence
 d) Site-specific translocation
 b) mRNA as a template to form cDNA
 d) All of these
 b) 96°C
 d) 74°C
 b) Single-stranded DNA oligonucleotide
 d) Single-stranded DNA oligonucleotide
 b) 4
 d) 16
 b) Annealing
 d) Primer extension
 b) Template – double stranded DNA
 d) Synthesis – 5' to 3' direction
 b) To copy DNA.
 d) To maintain the temperature of the PCR reaction.
 b) CAT
 d) ATC
 b) Denature DNA, extendDNA, primer anneal
 d) None of these
 b) DNA
 d) All of them
 b) EDTA, Mg²⁺, deoxyribonuclease

- c) Enzyme, Mg²⁺, deoxyribonuclease d) EDTA, Ca²⁺, deoxyribonuclease
- (47) What kind of cells is used for extraction of DNA in the experiment?
- a) Red blood cells b) Skin cells
c) Liver cells d) Buccal cells
- (48) Phenol used in DNA extraction
- a) precipitate DNA and leave protein in aq solution b) ppt RNA and leave DNA in solution
c) ppt cell debris d) ppt protein and leave nucleic acid
- (49) For isolation of DNA from plant the suitable method is
- a) CTAB method b) SDS-phenol extract
c) SDS-Proteinase K treatment d) all of these
- (50) Which of these dyes could you use to visualise DNA run on an agarose gel?
- a) Ponceau S b) Ethidium Bromide
c) Coomassie blue d) Crystal violet
- (51) You are conducting an experiment from tissue from patients obtained after surgery. Which steps are likely to give the biggest variability in a qRT-PCR assay?
- a) RNA isolation from samples b) Patient-to-patient variability
c) Sample storage prior to RNA isolation d) All of these
- (52) You are preparing an agarose gel to run your PCR products on. Your products are 800bp and 1.2kb. From the list below, what mass of agarose would be appropriate if you plan to make up 50ml of gel?
- a) 0.1 g b) dissolve 1 g in 10 ml and then add 0.5 ml of this solution to the 50 ml
c) 0.5 g d) 5 g
- (53) Automation in Sample delivery systems relate to
- a) Vacutainer b) Different coloured caps
c) Pneumatic tube systems d) Autoanalyzer
- (54) Sample identification correlates with all except
- a) Vacutainer b) Bar coding
c) blood vials d) colorimeter
- (55) Discrete analyzer uses
- a) Air bubbles separate samples b) No carry over effect of samples
c) Most versatile analyzer d) Improved communication
- (56) Random access analyzer
- a) Removal of parts easy b) Most versatile analyzer
c) Air bubbles separate samples d) No carry over effect of sample
- (57) Which of the following is a set of regulatory standards for clinical and medical labs that were created to help to make sure labs maintain quality assurance?
- a) Clinical lab improvement amendments (CLIA) b) Health Insurance Portability and Accountability Act (HIPAA)
c) Procedure manual d) Standard operating procedures (SOPs)
- (58) A control chart displays
- a) Whether workers are motivated b) Top management takes interest in quality

c) Process variability

d) Process capability

(59) In viral meningitis the _____ level is normal

a) lymphocyte

b) glucose

c) leukocyte

d) All of these

(60) In glucose tolerance test at least time required for fasting

a) 8 hr

b) 12hr

c) 6hr

d) None of these