10/01/2022

Printing Pages :1

Paper Code : BMLT-201 C (SVSU:2021-22/S)

EnrollmentNo.														

B.Sc. Medical Laboratory Technology (BMLT)

(IInd Year) EXAMINATION, 2021-22 (*Supplementary*)

Histopathology & Cytopathology

Time: 3 Hours ***Max. Marks: 70***

Note: All questions are compulsory. Make diagrams wherever required.

Q1. Attempt all MCQs. Select the correct choice as applicable. **(2x5=10)**

A. PAP stain is used for screening of-
1. Cervical cancer
2. Malarial parasites
3. Anaemia
4. Tuberculosis

B. Before fixing tissue it must be -
1. Dehydrated
2. Cleared
3. Embedded
4. None of these

C. Section cutting in histopathology is done by-
1. Hot plate
2. Water bath
3. Automatic stainer
4. Microtome

D. Oil immersion lens is
1. 10 X
2. 40 X
3. 100 X
4. 4 X

E. Freezing microtome is known as
1. Cryostat
2. Microscope
3. Flow cytometry
4. Electrophoresis

Q2. Fill in the blanks. Attempt all. **(2x5=10)**

i. Sliding is the type of.....
ii. DPX is used for.....
iii. Temperature of hot plate in histopathology is.....
iv. Removal of defective part from the tissue known as.....
v. Section cutting in histopathology is done by.....

Q3. Write True or False. Attempt all. **(2x5=10)**

i. Gram stain is used to detect cancer.
ii. Frozen sections is used for malignancies
iii. Benzene is used as clearing in histopathology.
iv. Polarizing is the type of microscope.
v. DNA in histopathology is stained by Leishman stain

Q4. Write short notes on - Attempt any four of the following: **(5x4=20)**

a. Describe Museum technique
b. Describe cryostat
c. Describe microtomes
d. classification of epithelium
e. Describe Barr bodies

Q5. Write essay on - Attempt any two of the following: **(10x2=20)**

i. Discuss fine-needle aspiration cytology (FNAC).
ii. What is PAS? Explain the principle, procedure and applications of PAS staining.
iii. Write in detail about light microscope.

12/01/2022

Printing Pages :1

Paper Code : BMLT-202 B (SVSU:2021-22/S)

EnrollmentNo.													

B.Sc. Medical Laboratory Technology (BMLT)

(2nd Year) EXAMINATION 2021-22 (*SUPPLEMENTARY*)

Bacteriology, Virology & Mycology

Time 3 Hours ***Max. Marks: 70***

Note: All questions are compulsory. Make diagrams wherever required.

Q1. Attempt any five MCQs. Select the correct choice as applicable. **(2x5=10)**

a. *Staphylococcus epidermidis* is a gram _____
- i. Positive
- ii. Both
- iii. Negative
- iv. None of these

b. Virus is the obligate intracellular_____
- i. Bacteria
- ii. Fungi
- iii. Virus
- iv. Parasite

c. Leprosy is caused by_____
- i. Mycobacterium
- ii. Bordetella
- iii. Picorna Virus
- iv. None of these

d. Herpes virus is the type of
- i. RNA Virus
- ii. Both RNA & DNA Virus
- iii. DNA Virus
- iv. None of these

e. DCA agar is type of
- i. Selective media
- ii. Indicator media
- iii. Differential media
- iv. Simple media

Q2. Fill in the blanks. Attempt all. **(2x5=10)**

a. Capsid protect the genetic material of _____

b. RT-PCR is stands for _____

c. HPV is stands for _____

d. Mycosis are the infections of _____

e. Mycobacterium is gram _____bacteria.

Q3. Write True or False. Attempt all. **(2x5=10)**

a. Virus can grow on artificial culture media.

b. *Candida albicans* is responsible for systematic mycosis.

c. Blood agar is the type of complex media.

d. *Haemophilus influezae* can cause pneumonia

e. Plague is caused by *Yersinia pestis*.

Q4. Attempt any four of the following: **(5x4=20)**

a. Explain the various parts of bacterial structure with the help of diagram.

b. Define mycosis and types of mycosis.

c. Write about the lab –diagnosis of viral infections.

d. List out the common diseases caused by fungi.

e. Describe the various culture methods.

Q5. Atempt any two of the following: **(10x2=20)**

a. Discuss Aspergillosis its clinical manifestation and lab-diagnosis.

b. Explain the principle, procedure, result and clinical significance of Gram staining technique.

c. What is Antimicrobial agent? Discuss the principle, procedure and various methods of antimicrobial sensitivity testing.

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Printing Pages :1

Paper Code : BMLT-203 B (SVSU:2021-22/S)

EnrollmentNo.

B.Sc Medical Laboratory Technology-IInd Year

Subject: Analytical & metabolic biochemistry

Time: 3 Hours *Max. Marks: 70*

Q.1: Multiple Choice Questions. Select the correct choice:- **(2x5=10)**

a. Which is the end product in protein metabolism:-
i.Pyruvate ii.Urea iii.Oxaloacetate iv.None of these.
b.Which technique measures scattering of light:-
i.Colorimetry ii.Turbidimetry iii.Centrifugation iv.None of these.
c.Which one of the following metabolic pathway involves the formation of lactate:-
i.Cori's cycle ii.Kreb's cycle iii.Hexose monophosphate pathway iv.None of these.
d.NADPH synthesis is concerned with:-
i.HMP shunt ii.Citric acid cycle iii.Urea cycle iv.None of these.
e.Which one of the following is a plasma protein:-
i.Albumin ii.Myoglobin iii.Insulin iv.None of these.

Q.2: Fill in the blanks. Attempt all. **(2x5=10)**

(a)Full form of OGTT is .....
(b) Urea is the end product of .....
(c)..... Links urea cycle to citric acid cycle.
(d) ..... is formed in pentose phosphate pathway .
(e)Full form of HPLC is.....

Q.3: Write True or False. Attempt all. **(2x5=10)**

a.Glucose-6-phosphate is the end product in glycolysis.

b.Sodium dodecyl sulphate is applied in chromatography.

c.Colorimetry measures absorption of light in VIS-region.

d.Rf value is observed in chromatography.

e.Ribose-5-phosphate is formed in pentose phosphate pathway .

Q.4: Attempt short notes on any four of the following: **(4x5=20)**

a. Chromatography
b. Flame photometry
c. Transamination reaction
d. ABG analyzer
e. Steps of glycolysis

Q.5: Attempt any two of the following: **(10x2=20)**

a. Explain the technique of colorimetry.Write its applications.

b.Explain the steps of urea cycle.Write its significance also.

c.What are vitamins?Explain types and biochemical role of vitamins.

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Printing Pages :1

Paper Code : BMLT-204 B (SVSU:2021-22/S)

EnrollmentNo.

B.Sc. Medical Laboratory Technology (BMLT)

(IIND Year, EXAMINATION, 2021-22

Molecular Cell Biology (*Supplementary)*

Time: 3 Hours ***Max. Marks: 70***

Note: All questions are compulsory.

Q1. Attempt any five MCQs. Select the correct choice as applicable. **(2x5=10)**

a. RNA contain the sugar
   i. Deoxyribose ii. Ribose iii. Xylose iv. Erythrose
b. in DNA Guanine-Cytosine pairs have
   i. 2 Hydrogen bond ii. 3 Hydrogen bond iii. 4 Hydrogen bond iv. 1 Hydrogen bond
c. Generally RNA does not carry
   i. Adenine ii. Thymine iii. Guanine iv. Cytosine
d. The Example of Purine nucleotide is
   i. Thymine ii.Uracil iii. Cytosine iv. Adenine
e. Protein synthesis occurs in
   i. Nuceous ii. Ribosomes iii. Mitochondria iv. All of these

Q2. Fill in the blanks. Attempt all. **(2x5=10)**

a. Transcription is the Process of .....
b. The function of Helicase is.....
c. The initiation codon of translation is.....
d. The sugar present in DNA is.....
e. Thymine combine with Adinine by.....hydrogen bond.

Q3. Write True or False. Attempt all. **(2x5=10)**

a. Translation is the process of RNA synthesis.
b. Adenine and Guanine are the pyrimidine.
c. DNA Ligase is the enzyme of Replication.
d. mRNA participate in protein synthesis.
e. B DNA contains 10 base pair per turn.

Q4. Attempt any four of the following: **(5x4=20)**

a. Describe the tRNA in details.
b. What is leading strand in DNA replication?
c. What is Chromosome? Write the types of Chromosome.
d. Describe the Mitochondria with labeled diagram.
e. Write a short note on DNA polymerase.
f. How RNA syntheses in prokaryotic cells differ from eukaryotic cells?

Q5. Attempt any two of the following: **(10x2=20)**

a. What is DNA? Describe the features of Watson and crick model of DNA.
b. Describe the steps of prokaryotic transcription.
c. Describe the process of repair mechanism of DNA.

19/01/2022

Printing Pages :1

Paper Code : BMLT-205 C (SVSU:2021-22/S)

EnrollmentNo.													

B.Sc. Medical Lab. Technology (BMLT) 2nd Year

Subject: Medical Biotechnology

Time: 3:00 hours **Max. Marks: 70**

Q1. MCQs. Attempt all. Select the correct choice as applicable. 2 Marks each (2x5=10)

a. Which is the most common organism considered for genetic manipulations?
i. *E. coli* ii. *Saccharomyces cerevisiae* iii. Cyanobacteria iv. *Bacillus Subtilis*

b. If the recognition sequence of the restriction enzyme HindIII is AAGCTT, then how many covalent bonds will be broken by the enzyme in the following DNA molecule?
5' -T-C-A-A-G-C-T-T-C-G-A-A-G-C-T-T-G-A- 3'
3' -A-G-T-T-C-G-A-A-G-C-T-T-C-G-A-A-C-T- 5'
i. 3 ii. 1 iii. 2 iv. 4

c. pBR 322 has/have which of the following selection marker(s)?
i. Amp^r ii. Tet^r iii. Both (a) and (b) iv. Kan^r

d. Under the influence of which ion does E. coli takes up plasmid from the environment?
i. Nickel ii. Calcium iii. Lead iv. Sulphur

e. There are various methods to distinguish whether a colony contains a recombinant or not. One of such method is:
i. Blue-white screening. ii. Checking whether replication is taking place or not.
iii. Checking the number of copies. iv. Looking for the multiple cloning site.

Q2. Fill in the blanks. Attempt all. 2 Marks Each (2x5=10)

a. In order to insert a foreign gene into a plasmid, both must be cut by the same _____.
b. The process of binding of primer to the denatured strand is called _____.
c. Chain-termination is a type of _____ method.
d. In reverse transcription polymerase chain reaction (RT-PCR), first a _____ (template) is reverse transcribed into its _____ using reverse transcriptase, and subsequently cDNA is amplified using PCR.
e. A gene for insulin has been inserted into a vector for the purpose of obtaining its protein product only. Such a vector is called _____.

Q3. Write True or False. Attempt all. 2 Marks Each (2x5=10)

a. PCR is used to diagnose genetic diseases.
b. Dideoxynucleotides act as chain terminator.
c. The plasmid, pBR 322 has kanamycin as the selection marker.
d. M13 is an example of filamentous phage and single stranded DNA vector.
e. Restriction enzymes are also called as molecular scissors.

Q4. Attempt any four of the following: 5 Marks Each (5x4=20)

a. Briefly elucidate the factors effecting the expression of cloned gene.
b. What are the basic steps involved in polymerase chain reaction (PCR)? Explain in detail.
c. Explain with the help of a neat labeled diagram structure of pUC19 vector.
d. Explain briefly the method of isolation of genomic DNA.
e. Write an explanatory note on mechanism of action of DNA ligases.

Q5. Attempt any two of the followings: 10 Marks Each (10x2=20)

a. What are the various methods of nucleic acid hybridization? Describe in detail each method.
b. What is mutagenesis? Mention various types of mutagenesis process and describe in detail each process.
c. Define restriction endonucleases. Write a brief note on nomenclature of restriction endonucleases. Discuss in details different types of restriction endonucleases useful in DNA manipulation.