THE UNIVERSITY OF CHENAB

Department of Allied Health Sciences
Bachelor of Medical Laboratory Technology

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Programs Offered by the Department of Allied Health Sciences	
Degree Name	**Degree Details/Eligibility Criteria**
Medical Laboratory Technology (MLT)	The Bachelor of MLT is of 4-years duration, spread over 8 regular semesters, and consisting of 133 credit hours after completing twelve years of higher secondary school certificate or equivalent. At least, 50% marks in intermediate or equivalent are required for admission in MLT.

Multiple Choice Questions

BIOLOGY (20 Questions)

1. Which of the following is the powerhouse of the cell?
    A) Nucleus
    B) Ribosome
    C) Mitochondrion
    D) Golgi apparatus

2. DNA replication occurs during which phase of the cell cycle?
    A) G1 phase
    B) S phase
    C) G2 phase
    D) M phase

3. In humans, red blood cells are formed in the:
    A) Liver
    B) Bone marrow
    C) Heart
    D) Lungs

4. Which macromolecule is made up of amino acids?
    A) Carbohydrates
    B) Lipids
    C) Proteins
    D) Nucleic acids

5. The largest part of the human brain is the:
    A) Cerebrum
    B) Cerebellum
    C) Brainstem
    D) Hypothalamus

6. Which of the following is a greenhouse gas?
    A) Oxygen
    B) Carbon dioxide

C) Nitrogen

D) Argon

7. Mendel's laws are based on experiments with:
   A) Corn
   B) Fruit flies
   C) Pea plants
   D) Bacteria

8. The movement of water through a semipermeable membrane is called:
   A) Diffusion
   B) Active transport
   C) Osmosis
   D) Endocytosis

9. Which vitamin is essential for blood clotting?
   A) Vitamin A
   B) Vitamin C
   C) Vitamin D
   D) Vitamin K

10. Which organ produces bile?
    A) Stomach
    B) Liver
    C) Pancreas
    D) Gallbladder

11. The smallest unit of inheritance is the:
    A) Chromosome
    B) Gene
    C) DNA molecule
    D) Nucleotide

12. Which process produces gametes?
    A) Mitosis

B) Binary fission
C) Meiosis
D) Budding

13. In photosynthesis, light energy is captured by:
A) Mitochondria
B) Chloroplasts
C) Ribosomes
D) Golgi bodies

14. The normal human body contains how many pairs of chromosomes?
A) 22
B) 23
C) 24
D) 46

15. The largest organ in the human body is the:
A) Liver
B) Brain
C) Skin
D) Lungs

16. Which of the following is an example of a communicable disease?
A) Diabetes
B) Tuberculosis
C) Cancer
D) Scurvy

17. Which part of the flower develops into fruit after fertilization?
A) Sepal
B) Petal
C) Ovary
D) Stigma

18. The enzyme that breaks down starch into sugar is:

A) Lipase
B) Amylase
C) Protease
D) Pepsin

19. Which blood group is called the universal donor?
   A) A
   B) B
   C) AB
   D) O

20. Which part of the brain controls breathing and heart rate?
   A) Cerebrum
   B) Cerebellum
   C) Medulla oblongata
   D) Hypothalamus

PHYSICS (20 Questions)

1. The SI unit of force is:
   A) Joule
   B) Newton
   C) Pascal
   D) Watt

2. Which of the following is a scalar quantity?
   A) Velocity
   B) Acceleration
   C) Displacement
   D) Speed

3. A body is in uniform motion if it:
   A) Covers equal distances in unequal intervals
   B) Covers unequal distances in equal intervals
   C) Covers equal distances in equal intervals
   D) Does not move at all

4. Newton's Third Law states that:
   A) Force = mass × acceleration
   B) A body at rest stays at rest

C) For every action, there is an equal and opposite reaction

D) Acceleration is directly proportional to force

5. The acceleration due to gravity on Earth is approximately:
   A) 6.67×10^{-11} m/s²
   B) 3.00×10^{8} m/s²
   C) 9.8 m/s²
   D) 1.6 m/s²

6. Work is said to be done when:
   A) Force is applied
   B) Displacement occurs
   C) No displacement occurs
   D) Force and displacement are both present and in the same direction

7. The energy possessed by a body due to its motion is called:
   A) Potential energy
   B) Kinetic energy
   C) Thermal energy
   D) Chemical energy

8. Which law explains the relationship between pressure and volume of a gas?
   A) Boyle's Law
   B) Ohm's Law
   C) Newton's Law
   D) Charles' Law

9. Sound cannot travel through:
   A) Solids
   B) Liquids
   C) Gases
   D) Vacuum

10. The frequency of a wave is measured in:
    A) Newton
    B) Hertz
    C) Joule
    D) Pascal

11. The speed of light in vacuum is approximately:
    A) 9.8 m/s
    B) 1.5×10^8 m/s
    C) 3.0×10^8 m/s
    D) 6.67×10^{-11} m/s

12. The resistance of a conductor depends on:
    A) Length
    B) Cross-sectional area
    C) Material
    D) All of the above

13. Ohm's Law is given by:
    A) $V = IR$
    B) $V = I/R$
    C) $I = R/V$
    D) $R = V + I$

14. Magnetic field lines always go from:
    A) North to South inside the magnet
    B) South to North outside the magnet
    C) North to South outside the magnet
    D) Equator to poles

15. Which type of lens is used to correct short-sightedness (myopia)?
    A) Convex lens
    B) Concave lens
    C) Cylindrical lens
    D) Bifocal lens

16. The image formed by a plane mirror is:
    A) Real and inverted
    B) Virtual and inverted
    C) Real and erect
    D) Virtual and erect

17. Which of the following quantities is conserved in all types of collisions?
- A) Kinetic energy
- B) Potential energy
- C) Momentum
- D) Acceleration

18. One kilowatt-hour is equal to:
- A) 3600 J
- B) 360,000 J
- C) 3.6×10^6 J
- D) 3.6×10^3 J

19. The unit of electric charge is:
- A) Ampere
- B) Ohm
- C) Volt
- D) Coulomb

20. Which of the following particles has no charge?
- A) Electron
- B) Proton
- C) Neutron
- D) Alpha particle

CHEMISTRY (20 Questions)

1. The smallest particle of an element that retains its properties is:
- A) Atom
- B) Molecule
- C) Ion
- D) Compound

2. The atomic number of an element is equal to the number of:
- A) Neutrons

B) Electrons + neutrons
C) Protons
D) Protons + neutrons

3. The most electronegative element is:
   A) Oxygen
   B) Fluorine
   C) Chlorine
   D) Nitrogen

4. The number of moles in 36 grams of water (H_2O) is:
   A) 1
   B) 2
   C) 3
   D) 4

5. Which of the following is a noble gas?
   A) Oxygen
   B) Chlorine
   C) Helium
   D) Nitrogen

6. A covalent bond is formed by:
   A) Transfer of electrons
   B) Sharing of electrons
   C) Loss of protons
   D) Gain of neutrons

7. The pH of a neutral solution is:
   A) 0
   B) 3
   C) 7
   D) 14

8. Which of the following is an acid?
  A) NaOH
  B) HCl
  C) KOH
  D) NH_3

9. Avogadro's number is approximately:
  A) 6.02×10^{23}
  B) 3.00×10^8
  C) 1.60×10^{-19}
  D) 9.81×10^4

10. Which element has the electronic configuration $1s^2\ 2s^2\ 2p^6$?
  A) Neon
  B) Oxygen
  C) Sodium
  D) Fluorine

11. Which of the following is an example of a physical change?
  A) Burning of paper
  B) Rusting of iron
  C) Boiling of water
  D) Digestion of food

12. The process of removing impurities from metals is called:
  A) Roasting
  B) Smelting
  C) Refining
  D) Alloying

13. Which gas is released during the reaction of an acid with a metal?
  A) Oxygen
  B) Hydrogen
  C) Nitrogen
  D) Carbon dioxide

14. The molecular formula of methane is:
  A) CH_3
  B) CH_4
  C) C_2H_6
  D) C_2H_4

15. A solution with pH = 2 is:
  A) Strongly acidic
  B) Weakly acidic
  C) Neutral
  D) Strongly basic

16. The chemical symbol of potassium is:
  A) P
  B) K
  C) Pt
  D) Po

17. What type of bond is formed between sodium and chlorine in NaCl?
  A) Covalent
  B) Metallic
  C) Ionic
  D) Hydrogen

18. Which of the following is a hydrocarbon?
  A) H_2O
  B) CH_4
  C) NaCl
  D) CO_2

19. Which of the following can act as both acid and base?
  A) NaCl
  B) H_2O
  C) HCl
  D) NaOH

20. Which separation technique is used to separate a mixture of salt and water?
- A) Filtration
- B) Decantation
- C) Distillation
- D) Chromatography

English (20 Questions)

1. Each question below consists of a related pair of words, followed by five lettered pairs of words. Select the lettered pair that best expresses a relationship similar to that expressed in the original pair.

HEIGHT:MOUNTAIN

A) Depth : Trench

B) Shade : Tree

C) Speed : Highway

D) Sea: water

2. Which sentence is grammatically correct?
- A) She don't like apples.
- B) She doesn't like apples.
- C) She not like apples.
- D) She isn't like apples.

3. Pick the correct form: "He ___ playing football every weekend."
- A) is
- B) are
- C) was
- D) were

4. Choose the correct meaning of the idiom: "Break the ice."
- A) To cool down
- B) To start a conversation
- C) To break something
- D) To relax

5. Identify the part of speech of the underlined word: "He ran **quickly**."
- A) Noun
- B) Verb
- C) Adjective
- D) Adverb

6. Select the sentence with the correct punctuation:
   A) Where are you going?
   B) Where are you going?
   C) Where, are you going?
   D) Where are you going!

7. Which word means the opposite of **'Scarce'**?
   A) Rare
   B) Abundant
   C) Few
   D) Limited

8. Fill in the blank: "She has been working here ___ 2010."
   A) since
   B) for
   C) from
   D) at

9. Choose the sentence with correct subject-verb agreement:
   A) The dogs runs fast.
   B) The dog run fast.
   C) The dogs run fast.
   D) The dog runs fastly.

10. Which sentence uses the passive voice?
    A) The teacher praised the student.
    B) The student was praised by the teacher.
    C) The teacher is praising the student.
    D) The student praises the teacher.

11. Identify the error: "Everyone have finished their work."
    A) Everyone
    B) Have
    C) Their
    D) Work

12. Pick the correct comparative form:
    A) This book is more better than that one.
    B) This book is better than that one.
    C) This book is gooder than that one.
    D) This book is best than that one.

13. Which sentence is conditional?
    A) If it rains, we will stay home.
    B) It rains every day.

C) We stayed home yesterday.

D) We will go tomorrow.

14. Choose the correct phrasal verb: "He decided to ___ smoking."

A) give up

B) give in

C) give out

D) give away

15. Select the correct synonym for **'Diligent'**:

A) Lazy

B) Hardworking

C) Careless

D) Angry

16. Fill in the blank: "She ___ to the market yesterday."

A) goes

B) went

C) going

D) gone

17. Which sentence uses direct speech?

A) He said that he was tired.

B) He said, "I am tired."

C) He tells that he is tired.

D) He was telling that he is tired.

18. What is the meaning of the word **'Ambiguous'**?

A) Clear

B) Uncertain

C) Simple

D) Certain

19. Choose the correct word: "She is ___ best student in the class."

A) the

B) a

C) an

D) no article

20. You _____ very clear.

A) Hear

B) Ring

C) Sound

D) Noise

Quantitative Reasoning (10 Questions)

1. If a shirt costs Rs. 500 and is sold at 10% discount, what is the selling price?
   A) Rs. 450
   B) Rs. 470
   C) Rs. 480
   D) Rs. 490

2. Find the simple interest on Rs. 2000 at 5% per annum for 2 years.
   A) Rs. 100
   B) Rs. 150
   C) Rs. 200
   D) Rs. 250

3. A car travels 150 km in 3 hours. What is its average speed?
   A) 40 km/h
   B) 45 km/h
   C) 50 km/h
   D) 55 km/h

4. Find the value of x in $7x = 49$.
   A) 5
   B) 6
   C) 7
   D) 8

5. If the perimeter of a rectangle is 30 cm and the length is 8 cm, find the width.
   A) 7 cm
   B) 8 cm
   C) 9 cm
   D) 10 cm

6. Simplify: $(8 \times 6) \div (3 \times 4)$
   A) 2
   B) 3
   C) 4
   D) 5

7. Convert 0.75 into fraction.
   A) 1/2
   B) 3/4
   C) 2/3
   D) 1/3

8. What is 15% of 600?
A) 75
B) 80
C) 85
D) 90

9. A number is increased by 20% to get 72. What is the original number?
A) 50
B) 55
C) 60
D) 65

10. A shopkeeper gives 10% discount on Rs. 800. How much discount is given?
A) Rs. 70
B) Rs. 75
C) Rs. 80
D) Rs. 85

Subject-Based (General Knowledge) (10 Questions)

1. What is the Islamic term for charity given voluntarily?
A) Zakat
B) Sadaqah
C) Hajj
D) Umrah

2. Who was the last prophet?
A) Jesus
B) Moses
C) Muhammad (PBUH)
D) Abraham

3. What is the name of the festival after Ramadan?
A) Eid-ul-Adha
B) Eid-ul-Fitr
C) Muharram
D) Mawlid

4. Who was the first Governor-General of Pakistan?

A) Liaquat Ali Khan
B) Allama Iqbal
C) Quaid-e-Azam Muhammad Ali Jinnah
D) Ayub Khan

5. The largest planet in our solar system is:
   A) Earth
   B) Mars
   C) Saturn
   D) Jupiter

6. The first revelation (Wahi) was revealed to the Prophet Muhammad (PBUH) in which cave?
   A) Cave Thawr
   B) Cave Hira
   C) Cave Saur
   D) Cave Qarn

7. Which Surah of the Holy Quran has Bismillah twice?
   A) Surah Tauba
   B) Surah Al-Fatiha
   C) Surah An-Naml
   D) Surah Al-Baqara

8. Pakistan came into being on:
   A) 14 August 1948
   B) 14 August 1947
   C) 15 August 1947
   D) 23 March 1940

9. What is the currency of Japan?
   A) Won
   B) Yen
   C) Yuan
   D) Dollar

10. Who was the first woman to accept Islam?
   A) Hazrat Fatima (R.A)
   B) Hazrat Ayesha (R.A)
   C) Hazrat Khadija (R.A)
   D) Hazrat Asma (R.A)