# DBZ-003-1012016 Seat No. _____

## First Year B. Sc. (Sem. II) Examination

**July - 2022**

## Microbiology : 201

*(Microbial Chemistry) (Old Course)*

**Faculty Code : 003**
**Subject Code : 1012016**

Time : $2\frac{1}{2}$ Hours] [Total Marks : **70**

**1** (A) Answer the following questions in brief : **4**

(1) An _____ is the smallest unit of an element which has all the properties of that element.

(2) Neutrons have _____ charge.

(3) In water molecules, which bonds are formed between hydrogen and oxygen ?

(4) Greater the hydrogen ion concentration _____ is the pH.

(B) Answer the following questions in brief : (any **one**) **2**

(1) What is pH Pka ?

(2) What is hydrolysis reaction ?

(C) Answer the following questions in detail : (any **one**) **3**

(1) Ionic bond with example.

(2) State the importance of hydrogen bond.

(D) Write a note on following questions : (any **one**) **5**

(1) Scope of biochemistry.

(2) Oxidation - reduction reaction.

**2** (A) Answer the following questions in brief : **4**

(1) What is non reducing sugar ?

(2) What are the essential fatty acid ?

(3) Double helical structure model of the DNA was proposed by_____.

(4) Enlist sulfur containing amino acid.

(B) Answer the following questions in brief : (any **one**) **2**

(1) What is tautomerization, what is its effect on the sugars?

(2) Draw a structure of purine and pyrimidines.

(C) Answer the following questions in detail : (any **one**) **3**

(1) Discuss secondary structure of protein.

(2) Functions of lipids.

(D) Write a note on following questions : (any **one**) **5**

(1) Detail note on cholesterol.

(2) Write a detail note types of RNA.

**3** (A) Answer the following questions in brief : **4**

(1) What is enzyme ?

(2) The first enzyme to be purified and crystallized was_____.

(3) The non protein part of an enzyme is known as_____.

(4) What is allosteric enzyme ?

(B) Answer the following questions in brief : (any **one**) **2**

(1) What is V max & Km ?

(2) Enlist class of enzymes.

(C) Answer the following questions in detail : (any **one**) **3**

(1) Write a note on lock & key model of enzyme.

(2) Regulation of enzyme activity.

(D) Write a note on following questions : (any **one**) **5**

(1) Mechanism of regulation of enzyme synthesis.

(2) Physical & chemical properties of enzyme.

4 (A) Answer the following questions in brief : 4

(1) Moist heat sterilization by autoclave is carried out at_____ temperature.

(2) U.V. radiation is most effective at _____ wavelength.

(3) Define dessication.

(4) Pasteurization is used for _____.

(B) Answer the following questions in brief : (any **one**) 2

(1) Enlist chemical agents used for microbial control.

(2) What is thermal death time & decimal reduction time ?

(C) Answer the following questions in detail : (any **one**) 3

(1) What is fractional sterilization ?

(2) Merits & demerits of Irradiation.

(D) Write a note on following questions : (any **one**) 5

(1) Application & mode of action of Alcohol.

(2) Phenol coefficient method for the evaluation of chemical antimicrobial agents.

5 (A) Answer the following questions in brief : 4

(1) Define Antibiotic.

(2) Penicillin was discovered by _____.

(3) Define MIC

(4) Rifampicin blocks _____synthesis.

(B) Answer the following questions in brief : (any **one**) 2

(1) Characteristics of ideal chemotherapeutic agent.

(2) What is broad spectrum & narrow spectrum antibiotics.

(C) Answer the following questions in detail : (any **one**) 3

(1) Non medical uses of antibiotics.

(2) Antiviral agents.

(D) Write a note on following questions : (any **one**) 5

(1) Mode of action of antibiotics affecting : cell wall synthesis.

(2) Microbiological assay of antibiotics.

---