

Q. P. Code :30061

[Time: Three Hours]

[Marks:100]

Please check whether you have got the right question paper.

- N.B:**
1. All questions are compulsory.
 2. All questions carry equal marks.
 3. Draw a neat and labelled diagrams wherever necessary.

Q.1 A) Fill in the blanks by choosing correct option given in the brackets.

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- Liquids with flash point less than 37.8°C are called as _____ (flammable, combustible, corrosive)
- _____ is a genetically improved variety of fish produced by the central institute of freshwater Aquaculture. (jayanti rohu, vaijayanti rohu, damayanti rohu)
- Separation of charged molecules through inert, porous material by applying electric charge is called as _____ (chromatography, spectroscopy, electrophoresis)
- Zero kelvin corresponds to a temperature of _____ on a Celsius scale. (173.16° , 273.16° , 274.16°)
- In the dairy industry cheese is produced by adding a recombinant renin called _____. (cathepsin, chymosin, trypsin)

Q.1B) Match the column I with II and rewrite.

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	I		II
a)	Oxidizing agent	i)	<i>Saccharomyces cerevisiae</i>
b)	Dolly	ii)	Adsorption chromatography
c)	Alcohol fermentation	iii)	Sodium
d)	TLC	iv)	Ian Wilmut
e)	Explosive	v)	Permanganates

Q.1C) State whether **True or False**.

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- Any finite or infinite collection of all possible objects under study is called sample.
- 1 mL volume corresponds to 0.001L.
- Dr. T.J. Pandian produced viable hybrid fishes using chemically and thermally induced polyploidy.
- When transmission is 100% then absorbance should be zero.
- Magnifying power of dissecting microscope 100X.

Q.1D) Answer in **one sentence**

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- Define pH.
- What is a resolving power?
- Define oxidizing agents.
- Define molality.
- Who is known as the father of gene therapy?

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Q.2A) What is a frequency distribution table? Explain the steps involved in its preparation. **10**

OR

A) What is a median? Explain the calculation of median for ungrouped and grouped data.

B) Write note on **any two** of the following:

- Good laboratory practices.
- Percentage concentrations.
- Pie diagram.
- Simple random and systematic sampling methods.

Q.3A) Describe the production of recombinant insulin. **10**

OR

A) Describe SCID and its treatment.

B) Write notes on **any two** from the following:

- In-vivo* gene therapy.
- Achievements of biotechnology in medicine.
- Transgenesis using nuclear transplant method.
- Green fluorescent protein.

Q.4 Answer **any two** from the following: **20**

- Describe the construction and applications of dissecting microscope.
- Explain the principle and applications of pH meter.
- Explain the principle and applications of spectrometry.
- Explain the principle of centrifugation and write note on ultra-centrifugation.

Q.5 Write short notes on **any four** of the following: **20**

- Corrosive chemicals.
- Molarity.
- Achievements of biotechnology in animal husbandry.
- DNA finger printing technique.
- Paper chromatography.
- Agarose gel electrophoresis.
