314330

12526

3 Hours / 70 Marks Seat No. | | | | | | | | |

Instructions – (1) All Questions are *Compulsory.*

(2) Answer each next main Question on a new page.

(3) Illustrate your answers with neat sketches wherever necessary.

(4) Figures to the right indicate full marks.

(5) Assume suitable data, if necessary.

(6) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. Attempt any FIVE of the following : **10**

a) List any two functions of spectrophotometer.

b) Give any two technical specifications of auto analyzer.

c) Define the term sterilizing. Give any one example of sterilizer.

d) State any two applications of blood gas analyzer.

e) Define electrophoresis.

f) List different air pollutants present in atmosphere.

g) State automated wet-chemical air analysis system.

Marks

2. Attempt any THREE of the following : **12**

a) Draw constructional diagram of calorimeter. List any four applications of calorimeter.

b) Describe ultracentrifuge with neat labeled diagram

c) Explain transmission electron microscope with neat diagram.

d) With a neat block diagram explain non-dispersive infrared analyzer for carbon monoxide measurement.

3. Attempt any THREE of the following : **12**

a) State any two applications and technical specifications of flame photometer.

b) Describe freezer with neat labeled diagram.

c) Draw equivalent circuit of conductivity cell used in high frequency method.

d) Draw a neat labeled diagram for measurement of nitrogen dioxide.

4. Attempt any THREE of the following : **12**

a) List any two applications each of –

i) Hot air oven

ii) Autoclave.

b) Explain scanning electron microscope with neat diagram.

c) Explain with neat labeled diagram the beat frequency method for conductivity measurement.

d) Describe temperature compensation of conductivity measurement.

e) Give two examples each for –

i) Analog Interface

ii) Digital I/O Interface

Marks

5. Attempt any TWO of the following : **12**

a) Explain the use of following radiation detector –

i) Geiger Muller Counter

ii) Gamma Counter

b) Describe working principle of dark field blood cell counter with neat diagram.

c) Draw null detector type pH meter and describe its working. List conductivity sensors used for measurement of conductivity.

6. Attempt any TWO of the following : **12**

a) Explain Beer Lambert law and suggest equipments based on Beer Lambert law and explain it.

b) Describe with neat sketches the functions of –

i) Ultrasonic Cleaner

ii) Ionization Chamber

c) Define the term electrophoresis. Draw and explain PAGE Electrophoresis.

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