

[30]

SARDAR PATEL UNIVERSITY

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B.Sc. (6TH Sem) Examination - March/April 2018 [CBCS]Friday, 6th April, 2018

10:00 AM to 01:00 PM

US06CINS06 (Instrumentation)

Analytical and Bio - Medical Instrumentation

Maximum Marks: 70

Que 1 Each question below gives a multiple choice of answers. Choose the most appropriate one. [10]

- 1 ____ is the Equation of Alternative Plating Calibration Curve.

| | |
|----------------|----------------|
| a) $C = K + A$ | b) $C = K - A$ |
| c) $C = K.A$ | d) $C = K/A$ |
- 2 Gas Filled Photo-Emissive Cell Consists of Small Quantities of Inert Gas Like _____.

| | |
|------------|----------|
| a) Neon | b) Argon |
| c) Krypton | d) Xenon |
- 3 To Obtain a Mass Spectrum, the Electric Field is Kept Between _____.

| | |
|------------------|------------------|
| a) 10 to 30 Volt | b) 20 to 40 Volt |
| c) 30 to 40 Volt | d) 50 to 70 Volt |
- 4 Liquid Samples May be Introduced By ____ Needle.

| | |
|--------------------|-------------------------------|
| a) Monodermic | b) Triodermic |
| c) Ion Core Plasma | d) Inductively Coupled Plasma |
- 5 Full Form of RFMS is _____.

| | |
|--|--------------------------------------|
| a) Radio Frequency Magnetic Spectrometer | b) Radio Frequency Mass Spectrometer |
| c) Radio Frequency Magnetic Spectroscopy | d) Radar Frequency Mass Spectrometer |
- 6 The Full Form of TMSi is _____.

| | |
|-------------------------|-----------------------|
| a) Tetra Methyl Silane | b) Tri Methyl Silane |
| c) Tetra Methane Silane | d) Tera Methyl Silane |
- 7 Full Form of ECG is _____.

| | |
|-------------------------|-------------------------|
| a) Electrocardiogram | b) Electroencophalogram |
| c) Electricalcardiogram | d) Electromayogram |
- 8 ____ Hz is the Frequency Range of β - State.

| | |
|------------|--------------|
| a) 1 - 10 | b) 13 - 22 |
| c) 23 - 50 | d) 110 - 200 |
- 9 The Diagnostically Useful Frequency Range of Electrocardiogram is usually ____ Hz.

| | |
|----------------|----------------|
| a) 0.01 to 140 | b) 0.05 to 150 |
| c) 0.10 to 150 | d) 0.25 to 70 |
- 10 The Venous Circulatory System of Our Body Having the Pressure Range ____ mm of Hg.

| | |
|-----------|------------|
| a) 1 - 4 | b) 5 - 15 |
| c) 6 - 25 | d) 30 - 50 |

- Que 2 Short Questions (Attempt any TEN) [20]**
- 1 Enlist The Types of Monochromators.
 - 2 Enlist The Types of Optical Filters.
 - 3 Define Larmer Frequency. What is its Significance?
 - 4 Enlist the Basic Parts of NMR Spectrometer.
 - 5 Enlist the Factors on Which Principle of NMR is Based.
 - 6 Draw Schematic Diagram of Magnet Deflection Mass Spectrometer.
 - 7 Define Systolic and Diastolic Pressure.
 - 8 Define Resting Potential and Evoked Potential.
 - 9 Draw Block Diagram of ECG Machine.
 - 10 What are Acronym of EEG and EMG?
 - 11 Draw Block Diagram of EEG Machine.
 - 12 Enlist the Types of Mass Spectrometer.
- Que 3 [A] Explain in Detail Beer - Lambert's Law. [06]**
[B] Write a Note on Photovoltaic Cell. [04]
- OR**
- [C] Give an Account of Absorption Filter. [05]**
[D] Write a Note on Interference Filter. [05]
- Que 4 [A] Write a Note on IR Spectrometry. [05]**
[B] Explain in Detail Pyro - Electric Detector. [05]
- OR**
- [C] Explain in Detail Basic Components of IR Spectrophotometer. [10]**
- Que 5 [A] What is NMR? Explain any One Principle of NMR and Also Discuss Its Applications. [10]**
- OR**
- [B] What is Mass Spectroscopy? Explain How It Works With Necessary Schematic Diagram. [06]**
[C] Write a Note on Radio Frequency Mass Spectrometer. [04]
- Que 6 [A] Write a Note on Bio - Electric Signal With Necessary Figures. [06]**
[B] Write a Note on Blood Pressure Measurement. [04]
- OR**
- [C] Write a Note on ECG. Describe Block Diagram of It. [05]**
[D] Write a Note on ECG Leads. [05]