

| <b>THIRD YEAR, SEM VI, PHARMACEUTICAL ANALYSIS-II</b> |   |  |   |  |  |
|---|---|--|---|--|--|
| <b>SAMPLE QUESTIONS CBGS/CBCS</b>                     |   |  |   |  |  |
|   | <b>Option a</b>   | <b>Option b</b>                                      | <b>Option c</b>                               | <b>Option d</b>  |  |
| <b>Q.1</b>  | What is the wavelength range for UV spectrum of light                     |  |   |  |  |
|   | 400 nm – 700 nm   | 200-400nm  | 0.01 nm to 10 nm                              | 200nm to 800 nm  |  |
| <b>Q.2</b>  | The scattering of waves in Bragg's law experiment is due to               |  |   |  |  |
|   | Einstein's scattering   | Rayleigh scattering                                  | Newton scattering                             | Inelastic scattering   |  |
| <b>Q.3</b>  | X-rays are generated by   |  |   |  |  |
|   | Geiger tube   | Goniometer   | Coolidge tube                                 | Rotameter  |  |
| <b>Q.4</b>  | Diffraction gratings work on the basis of                                 |  |   |  |  |
|   | Max-Well Boltzman's equation  | Bragg's equation                                     | Noise-whitney equation                        | Beer's law   |  |
| <b>Q.5</b>  | During relaxation, the electron spin is reversed in                       |  |   |  |  |
|   | Fluorescence  | Phosphorescence                                      | IR  | NMR  |  |
| <b>Q.6</b>  | Fluorescence is a result of transition of electron from                   |  |   |  |  |
|   | Singlet ground state to singlet excited state                             | Lower singlet excited state to singlet ground state. | Triplet excited state to singlet ground state | Triplet ground state to singlet excited state                        |  |
| <b>Q.7</b>  | Which of the following statement is not correct                           |  |   |  |  |
|   | Absorptivity changes with the intensity of the light                      | Absorbance is independent of intensity of the light  | Absorbance has no units                       | Absorptivity is a constant and depends on the nature of the molecule |  |
| <b>Q.8</b>  | Which of the following is a non-dispersive wavelength selector            |  |   |  |  |
|   | Gratings  | Prisms-glass   | Filters                                       | Prism-Quartz   |  |
| <b>Q.9</b>  | Quantum yield of fluorescence is the ratio of intensities of              |  |   |  |  |
|   | Incident radiation to fluorescent radiation                               | Fluorescent radiation to incident radiation          | Absorbed radiation to fluorescent radiation   | Fluorescent radiation to absorbed radiation                          |  |
| <b>Q.10</b>   | Which of the following material is used to coat the cathode in photo tube |  |   |  |  |
|   | Copper  | Sodium   | Bromium                                       | Cesium   |  |
| <b>Q.11</b>   | Collimator is a device used in monochromators to                          |  |   |  |  |
|   | Focus the required range of wavelength of radiation                       | Eliminate interferences from other amines            | Eliminate reflection and scattering           | Focus the incident radiation parallel on to the dispersing device    |  |
| <b>Q.12</b>   | Sample size for student t-test is:  |  |   |  |  |
|   | More than 30  | Less than 30   | Between 50 and 100                            | Between 100 and 200  |  |

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|-------------|--|--|---|--|--|
| <b>Q.13</b> | The light which reaches the detector without passing through the cell is known as  |  |   |  |  |
|             | Dark radiation   | Stray radiation  | Photoluminescence   | Chemiluminescence  |  |
| <b>Q.14</b> | Which of the following is an example of anionic interference in atomic emission spectroscopy?  |  |   |  |  |
|             | Interference of high concentration of sodium ions in assay calcium ions.   | Interference by formation of less volatile salt with sulphates by calcium. | Increased viscosity of the analyte solution by sugars.                    | Decreased drop size of the analyte solution by alcohols                |  |
| <b>Q.15</b> | The selectivity and sensitivity of fluorescence spectroscopy is higher than that of absorption spectroscopy because of all of the following EXCEPT |  |   |  |  |
|             | Fluorescence substance have different $\lambda_{\text{max}}$ of excitation and emission  | Rigid molecules can only fluoresce   | Fluorescence intensity depends on the intensity of the incident radiation | Every molecule that absorbs in UV region can show fluorescence         |  |
| <b>Q.16</b> | Dynodes are present in   |  |   |  |  |
|             | Barrier layer detector   | Phototube  | Photomultiplier tube  | Diode array  |  |
| <b>Q.17</b> | Cut off wave length is the wavelength  |  |   |  |  |
|             | Below which a solvent absorbs too much radiation   | Above which a solvent absorbs too much radiation                           | Below which an analyte absorbs too much radiation                         | Above which a analyte absorbs too much radiation                       |  |
| <b>Q.18</b> | In fluorescence spectroscopy, emission spectra is obtained by keeping  |  |   |  |  |
|             | Excitation wavelength constant   | Emission wavelength constant   | Both excitation and emission wavelength constant                          | Both excitation and emission wavelength varying                        |  |
| <b>Q.19</b> | The purpose of secondary filter in fluorescence spectroscopy is  |  |   |  |  |
|             | Allows only excitation radiation   | Allows only emission radiation   | Allows both excitation and emission radiations                            | Allows transmitted radiation   |  |
| <b>Q.20</b> | Thermal analysis is defined as   |  |   |  |  |
|             | Measurement of concentration of materials as a function of temperature   | Measurement of solubility of materials as a function of temperature        | Measurement of physical properties as a function of temperature           | Measurement of line positions of crystals as a function of temperature |  |
| <b>Q.21</b> | Fluorescence quenching is  |  |   |  |  |
|             | Conversion of fluorescence to phosphorescence  | Enhancement of fluorescence  | Absence of fluorescence   | Repression of fluorescence   |  |

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|-------------|--|------------------------|----------------------|---------------------|--|
| <b>Q.22</b> | Which of the following is true about radiochemical methods?  |                        |                      |                     |  |
|             | Eliminate the need for chemical preparation  | Not sensitive          | Not accurate         | Not specific        |  |
| <b>Q.23</b> | Phosphorescence mainly results from  |                        |                      |                     |  |
|             | Internal conversion  | Vibrational relaxation | Intersystem crossing | Crossover           |  |
| <b>Q.24</b> | The compound C <sub>8</sub> H <sub>8</sub> O shows the following IR absorption data: 1450, 1265, 1360, 1680 cm <sup>-1</sup> . What will be this compound? |                        |                      |                     |  |
|             | acetophenone   | p-cresol               | Benzyl alcohol       | p-tolualdehyde      |  |
| <b>Q.25</b> | Which of the following source is continuous source for fluorometry   |                        |                      |                     |  |
|             | Deuterium discharge lamp   | Xenon arc lamp         | Mercury vapor lamp   | Hollow cathode lamp |  |