2/51

0201N1459

Candidate's Seat No :_____

M.Sc. Sem.-1 Examination

404

Pharma Science

January-2024

Time : 2-30 Hours] **[Max. Marks : 70**

Q.1A	What is importance of stereochemistry in pharmaceutical science?	7
Q.1B	Write about Eantiomeric drugs with example – Warfarin and Fluoxetine	7
	OR	
Q.1A	Write a note on Stereochemistry.	7
Q.1B	What should be considered to compare isomeric drugs?	7
Q.2 A	Describe the process of nitrogen fixation and its importance in the nitrogen cycle.	7
Q.2 B	Discuss the biochemical functions of vitamin B12 (cyanocobalamin) in the human body. Explain the role of zinc in metallo enzymes and its significance in biological processes.	7
	OR	
Q.2 A	Describe the biochemistry of non-metals such as potassium (K) and their physiological roles. Explain the mechanism of the sodium-potassium (Na-K) pump.	7
Q.2 B	Write a detailed note on toxic Metals and Chelation Therapy.	7
Q.3 A	Write a detailed note on the premises, especially the Storage and Weighing area.	7
Q.3 B	Describe the Pharmaceutical quality system.	7
	OR	
Q.3 A	Describe the role of documentation for quality control in GMP.	7
Q.3 B	Discuss the complaints and product recall in detail.	7
Q.4 A	**Solve the following question:** In alphabetical order, the six most common last names in the United States are Brown, Davis, Johnson, Jones, Smith, and Williams (The World Almanac, 2006). Assume that a sample of 50 individuals with one of these last names provided the following data.	7

Brown	Williams	Williams	Williams	Brown
Smith	Jones	Smith	Johnson	Smith
Davis	Smith	Brown	Williams	Johnson
Johnson	Smith	Smith	Johnson	Brown
Williams	Davis	Johnson	Williams	Johnson
Williams	Johnson	Jones	Smith	Brown
Johnson	Smith	Smith	Brown	Jones
Jones	Jones	Smith	Smith	Davis
Davis	Jones	Williams	Davis	Smith
Jones	Johnson	Brown	Johnson	Davis

Summarize the data by constructing the following:

a. Are these data categorical or quantitative?

b. Provide Relative and percent frequency distributions.

Construct a bar chart and pie chart.

Q.4 B	Ashortage of candidates has required school districts to pay higher salaries and offer extrasto attract and retain school district superintendents. The following data show the annual basesalary ($1000s) for superintendents in 20 districts in the greater Rochester, New York, area(The Rochester Democrat and Chronicle, February 10, 2008).	7

187	184	174	175	172
202	165	208	215	162
172	182	170	175	185

P.T.O

<table>
<tr><td></td><td>Use classes of 150–159, 160–169, and so on in the following.
a. Show the frequency distribution.
b. Show the cumulative frequency distribution.
Draw Histogram.</td><td></td></tr>
<tr><td></td><td>OR</td><td></td></tr>
<tr><td>Q.4 A</td><td>Nielsen Media Research provides two measures of the television viewing audience: a television program rating, which is the percentage of households with televisions watching a program, and a television program share, which is the percentage of households watching a program among those with televisions in use. The following data show the Nielsen television ratings and share data for the Major League Baseball World Series over a nine-year period (Associated Press, October 27, 2003).
<table>
<tr><td>Rating (x)</td><td>19</td><td>17</td><td>17</td><td>14</td><td>16</td><td>12</td><td>15</td><td>12</td><td>13</td></tr>
<tr><td>Share (y)</td><td>32</td><td>28</td><td>29</td><td>24</td><td>26</td><td>20</td><td>24</td><td>20</td><td>22</td></tr>
</table>
a. Compute sample covariance.
Compute and interpret the sample correlation coefficient.</td><td>7</td></tr>
<tr><td>Q.4 B</td><td>The cost of consumer purchases such as single-family housing, gasoline, Internet services,tax preparation, and hospitalization were provided in The Wall-Street Journal (January 2,2007). Sample data typical of the cost of tax-return preparation by services such as H&RBlock are shown below.
<table>
<tr><td>120</td><td>230</td><td>110</td><td>115</td><td>160</td></tr>
<tr><td>130</td><td>150</td><td>105</td><td>195</td><td>155</td></tr>
<tr><td>105</td><td>360</td><td>120</td><td>120</td><td>140</td></tr>
<tr><td>100</td><td>115</td><td>180</td><td>235</td><td>255</td></tr>
</table>
a. Compute the mean, median and mode.
Compute the variance and standard deviation.</td><td>7</td></tr>
<tr><td>Q.5</td><td>Answer the Following Short Questions (Any 7)</td><td>14</td></tr>
<tr><td>1</td><td>Define GMP.</td><td></td></tr>
<tr><td>2</td><td>Define authorized person.</td><td></td></tr>
<tr><td>3</td><td>Define and discuss CAPA.</td><td></td></tr>
<tr><td>4</td><td>Define: Ordinal scale of measurement</td><td></td></tr>
<tr><td>5</td><td>Define: Cluster Sampling</td><td></td></tr>
<tr><td>6</td><td>Write down the formula of coefficient of variation</td><td></td></tr>
<tr><td>7</td><td>Define: Median</td><td></td></tr>
<tr><td>8</td><td>Define Chilarity.</td><td></td></tr>
<tr><td>9</td><td>Define Stereoisomer</td><td></td></tr>
<tr><td>10</td><td>Name one toxic metal and briefly describe its potential adverse effects on human health.</td><td></td></tr>
<tr><td>11</td><td>Provide an example of an essential and a trace element and describe their roles in biological systems.</td><td></td></tr>
<tr><td>12</td><td>Explain the principle behind magnetic resonance imaging (MRI) and its clinical applications.</td><td></td></tr>
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