

FIRST YEAR HIGHER SECONDARY EXAMINATION MARCH 2019

SUBJECT : STATISTICS

CODE. NO: FY 32

Qn No	Sub Qns	Answer Key/Value Points	Score	Total
1	(a) (b)	(ii) Geographical $\frac{f}{N}$, any comment related to relative frequency.	1 1	2
2		Any two Sources		2
3.		Any bar diagram		2
4		Proper Diagram (Name only $1\frac{1}{2}$, Shapes only $1\frac{1}{2}$)		2
5		Explanation - Convenience Sampling (Any relevant answer related to Sampling Full credit)		2
6.		a) $\rightarrow$ mode b) $\rightarrow$ any answer c) $\rightarrow$ median d) $\rightarrow$ GM	$\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$	2
7.	a) b)	New Delhi (G.D) Short Note on ISI	1 2	3
8	a) b)	Sample FGD - Explanation (Any other method for Primary data collection 2 Give 1 score)	1 2	3
9.	a) b)	ii) 2 $GM^2 = AM \times HM$ $15^2 = 17 \times HM$, $HM = \frac{225}{17} = 13.24$	1 1 1	3

Qn No	Sub Qns	Answer Key/Value Points	Score	Total												
10		$Q_1 = 9$, $Q_3 = 19$ $QD = \frac{Q_3 - Q_1}{2} = \frac{19 - 9}{2} = 5$ (Ascending order give 1 score, Formula - 1 score)	1+1 1	3												
11	a) b)	Give full answer 1 score for any answer $S_k = \frac{\text{Mean} - \text{Mode}}{SD}$ Mean = 45.2 $SD = \sqrt{\frac{\sum x^2}{n} - \bar{x}^2}$ $= \sqrt{2427 - (45.2)^2}$ $= 19.6$ $S_k = \frac{45.2 - 43.7}{19.6} = 0.07$ (* 1 mark for formula , 2 score for Mean & SD)	1 1 1	3												
12	a) b)	ii) 40 <table><tr><td>x</td><td>1</td><td>4</td><td>3</td><td>2</td></tr><tr><td>x²</td><td>1</td><td>16</td><td>9</td><td>4</td></tr></table> $\sum x = 10$ $\sum x^2 = 30$ $\bar{x} = \frac{\sum x}{n} = 2.5$ $SD = \sqrt{\frac{\sum x^2}{n} - \bar{x}^2} = \sqrt{7.5 - 6.25} = 1.11$	x	1	4	3	2	x ²	1	16	9	4	1 2	3		
x	1	4	3	2												
x ²	1	16	9	4												
13	a) b)	Defn of Tabulation <table><tr><td>class</td><td>0-15</td><td>15-30</td><td>30-45</td><td>45-60</td><td>60-75</td></tr><tr><td>fre</td><td>3</td><td>7</td><td>18</td><td>25</td><td>20</td></tr></table> (Any attempt Give full score - Malayalam Translation not clear)	class	0-15	15-30	30-45	45-60	60-75	fre	3	7	18	25	20	1 2	3
class	0-15	15-30	30-45	45-60	60-75											
fre	3	7	18	25	20											

Qn No	Sub Qns	Answer Key/Value Points	Score	Total																											
14		Pictogram (not considering angle)	4	4																											
15		$\bar{X} = \frac{n_1 \bar{x}_1 + n_2 \bar{x}_2}{n_1 + n_2}$ $44 = \frac{40 \bar{x}_1 + 10 \times 40}{50}$ $\bar{x}_1 = 45 \text{ Kg}$ (Give 2 score for identification as combined mean or weighted mean)	2 1 1	4																											
16	a) ii) c.v b)	<table border="0"> <tr> <td>x</td><td>6</td><td>8</td><td>10</td><td>12</td><td>14</td><td>16</td><td>18</td><td>20</td></tr> <tr> <td>f</td><td>1</td><td>14</td><td>25</td><td>27</td><td>18</td><td>9</td><td>4</td><td>2</td></tr> <tr> <td>cf</td><td>1</td><td>15</td><td>40</td><td>67</td><td>85</td><td>94</td><td>98</td><td>100</td></tr> </table> Median = Size of $\frac{N+1}{2}$ th item = Size of $\frac{100+1}{2}$ th item = 12 $x - 12 \times f : 6 \quad 56 \quad 50 \quad 0 \quad 36 \quad 36 \quad 24 \quad 16$ $\Sigma x - \bar{x} = 224$ MD = $\frac{224}{100} = \underline{\underline{2.24}}$ * (MD from any average give full Score) Even if not arranged properly median = 14 Give full score for finding MD)	x	6	8	10	12	14	16	18	20	f	1	14	25	27	18	9	4	2	cf	1	15	40	67	85	94	98	100	1 1 1 2	4
x	6	8	10	12	14	16	18	20																							
f	1	14	25	27	18	9	4	2																							
cf	1	15	40	67	85	94	98	100																							

Qn No	Sub Qns	Answer Key/Value Points	Score	Total
17	a) $P(\bar{A} \cup \bar{B}) = 1 - P_3$ b) $P(\bar{A} \cap \bar{B}) = 1 - P_1 - P_2 + P_3$ c) $P(A \cap \bar{B}) = P_1 - P_3$ d) $P(\bar{A} \cap B) = P_2 - P_3$ * (Any attempt full score)	1 1 1 1	4	
18	a) $P(A/B) = \frac{P(A \cap B)}{P(B)} = \frac{1}{3}$ b) $P(A \cap \bar{B}) = P(A) - P(A \cap B) = \frac{1}{4}$ c) $P(B/A^c) = \frac{P(B \cap A^c)}{P(A^c)} = \frac{1}{4}$ d) $P(A \cap B) = P(A) \times P(B) = \frac{1}{12}$ * (Any two correct Answer give full score)	1 1 1 1	4	
19.	a) iv) Judgement Sampling b) Any Explanation	1 3	4	
20	a) 3, 3, 4, 4, 5, 6, 6, 7, 7, 8, 8 $Q_1 = 4$, $Q_3 = 7$, $Q_2 = 6$ Min = 3 , Max = 8 Figure (* Give 2 score for rough figure)	1 1	2	

