



MAN-010-007708 Seat No. _____

Bachelor of Hotel & Tourism Management

(Sem. VII) Examination

October / November – 2016

Business Statistics - 7.6.E.3

(Old Course)

Faculty Code : 010

Subject Code : 007708

Time : 3 Hours]

[Total Marks : 70

- Instructions :** (1) Attempt any four questions from Q. 3 to Q. 8.
(2) All questions carry equal mrks.
(3) Students are permitted to use simple calculator and logarithmic tables.
(4) Students may be provided five graph papers each.
(5) Q. 1 and Q. 2 are compulsory.

- 1 The data given below relate to the sales and advertising expenditure of 20 companies. You are required to form a bi-variate frequency distribution. **7**

Comp- any	Sales (Rupees Lakhs)	Advertising Expenditure (Rupees Lakhs)	Comp- any	Sales (Rupees Lakhs)	Advertising Expenditure (Rupees Lakhs)
1	170	70	11	163	70
2	135	65	12	139	67
3	136	65	13	122	63
4	137	64	14	134	68
5	148	69	15	140	67
6	124	62	16	132	69
7	117	65	17	120	66
8	128	70	18	148	68
9	143	71	19	120	67
10	129	62	20	152	67

OR

- 1 Draw more than ogive and less than ogive for the following distribution.

Monthly wages (In Rupees)	No. of workers	Monthly wages (In Rupees)	No. of workers
900-950	6	1100-1150	16
950-1000	10	1150-1200	12
1000 –1050	22	1200 –1250	15
1050 –1100	30		

- 2 Represent the following data of the distribution of income of leading company with pie-chart. 7

Particulars	(Rupees Lakhs)
Raw Materials	1689
Taxes	582
Manufacturing Expenses	543
Employees	470
Other Expenses	286
Depreciation	94
Dividends	75
Retained Income	51
Total	3,790

OR

- 2 Draw a histogram and frequency polygon representing the following figures : 7

Length of Service (In Years)	No. of workers	Length of Service (In Years)	No. of workers
0-5	5	20-25	32
5-10	12	25-30	6
10-15	25	30-35	1
15-20	48		

- 3 Following is the frequency distribution of preferred length of kitchen slabs obtained from the preference study on 50 chefs. 14

Length of Slabs (In metres)	No. of chefs	Length of Slabs (In metres)	No. of chefs
1.25-1.50	4	2.25-2.50	10
1.50-1.75	6	2.50-2.75	7
1.75-2.00	8	2.75-3.00	3
2.00-2.25	12		

With the help of the above mentioned data, prove that $X \geq GM \geq HM$.

- 4 Comment on the skew-ness and kurtosis of the following data distribution : 14

Wages per day (\$)	No. of Workers	Wages per day (\$)	No. of Workers
2.5-7.5	4	22.5-27.5	16
7.5-12.5	10	37.5-32.5	12
12.5-17.5	20	32.5-37.5	2
17.5-22.5	36	Total	100

- 5 Estimate the sales corresponding to advertising expenditure of Rupees 50 thousand. 14

Sales Revenue (In Lakhs)	Advertising Expenditure (In Thousand)				Total
	5-15	15-25	25-35	35-45	
75-125	3	4	4	8	19
125-175	8	6	5	7	26
175-225	2	2	3	4	11
225-275	3	3	2	2	10
Total	16	15	14	21	66

- 6 Forecast the next year sales based on the following data. 14
Also indicate the seasonal and cyclical fluctuations :
Quarterly Sales of a resort in LCU Quarters

Year	Quarters			
	I	II	III	IV
2011	5.5	5.4	7.2	6.0
2012	4.8	5.6	6.3	5.6
2013	4.0	6.3	7.0	6.5
2014	5.2	6.5	7.5	7.2
2015	6.0	7.0	8.4	7.7

- 7 The Front Office Manager of Hotel Excellency wants to 14
analyse the time taken for checking into the hotel.
Particularly, he wanted to study the amount of time it took
for the luggage to reach the guest room after he / she has
completed formalities at the reception. The data collected by
the Front Office Manager is shown below for 8 days where
7 guests per day were taken as sample :

Day	Amount of time taken (In minutes)						
1	5.38	5.26	5.41	5.13	5.51	6.02	5.34
2	5.47	5.10	5.36	6.04	5.54	5.17	5.43
3	5.51	5.39	5.41	5.33	5.27	5.19	6.07
4	5.23	5.35	6.01	6.02	5.47	5.53	5.38
5	6.02	5.37	5.17	5.46	5.28	5.59	5.33
6	5.31	5.22	6.02	5.40	5.39	5.12	5.19
7	5.53	5.17	5.29	5.37	5.42	6.02	5.22
8	5.16	6.03	5.50	5.26	5.15	5.35	5.55

Decide whether the process is in or out of the control.

- 8 The following frequency distribution is given with-median 14
as 33.5 and mode as 34 marks. Find out the arithmetic mean.

Marks	No. of Students
00-10	04
10-20	16
20-30	x
30-40	y
40-50	z
50-60	06
60-70	04
Total	230