

All solved MCQs, Chapter wise

Introduction to STATISTICAL THEORY Part _1

**Compiled by
Pioneers' Statistics MCQs group members**

Chapter 2

PRESENTATION OF DATA

1.	Which of the following is not an example of condensed data?	
	(A) frequency distribution	<u>(B) data array</u>
	(C) histogram	(D) polygon

2.	In the construction of a frequency distribution the steps are to:	
	(A) decide the number of classes	(B) arranging the data in ascending/descending order
	(C) locate the smallest and largest values in the data set	<u>(D) all of above</u>

3.	The number of classes in a frequency distribution generally should be	
	(A) less than five	(B) more than twenty
	<u>(C) between five and twenty</u>	(D) between ten and twenty

4.	As the number of observations and classes increase, the shape of the frequency polygon:	
	(A) remains same	<u>(B) tends to smooth</u>
	(C) become more erratic	(D) none of these

5.	A cumulative frequency distribution is graphically represented by:	
	(A) frequency curve	(B) frequency polygon
	(C) pie chart	<u>(D) Ogive</u>

6.	A relative frequency distribution presents frequencies in terms of:	
	(A) whole numbers	(B) percentages
	<u>(C) fractions</u>	(D) all of above

7.	A diagram presents properties that look like slices of a pizza is known as:	
	(A) a bar diagram	(B) a component bar diagram
	(C) a histogram	<u>(D) a pie diagram</u>

8.	Observed data organized into tabular form is called:	
	<u>(A) a bar chart</u>	(B) a pie chart
	(C) a frequency polygon	(D) a frequency distribution

9.	The number of occurrences of a data value is called:	
	<u>(A) the frequency</u>	(B) the cumulative frequency
	(C) the relative frequency	(D) all of above

10.	In the following stem-leaf diagram:																																																																																						
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Chapter 3

MEASURES OF CENTRAL TENDENCY OR AVERAGES

1.	Half the observations are always larger than the	
	(A) Mean	(B) Total
	<u>(C) Median</u>	(D) Mode

2.	The value that occurs most often in a set of data is called:	
	(A) Mean	<u>(B) Mode</u>
	(C) Geometric Mean	(D) Harmonic mean

3.	In class of an open end class,	
	(A) A median cannot be computed	(B) The arithmetic mean and the median will always be exactly equal
	<u>(C) The mean cannot be computed</u>	(D) The distribution is always positively skewed

4.	Which of the following is a true statement about the median?	
	(A) It is always one of the data values	(B) It is influenced by extreme values
	<u>(C) Fifty percent of the observations are larger than the median</u>	(D) It is the middle value of the data value

5.	Which of the following is not a characteristic of the arithmetic mean?	
	(A) It is influenced by extreme values	(B) The sum of the observations from the mean is zero
	<u>(C) Fifty percent of the observations are larger than the mean</u>	(D) The sum of the squared deviations from mean is always minimum

6.	Find the mean of the following sample of distances of starts from the earth: 18.2, 56.9, 24.6, 13.5	
	(A) $\bar{X} = 28.30$	(B) $\bar{X} = 43.40$
	(C) $\mu = 28.30$	(D) $\mu = 43.40$

7.	In a positively skewed distribution, then mean is always	
	(A) smaller than the median	(B) Equal to the median
	(C) Larger than the median	(D) Equal to the mode

8.	The median is larger than the mean when	
	(A) The distribution is positively skewed	(B) The distribution is negatively skewed
	(C) The data is organized into a frequency distribution	(D) The distribution is symmetrical

9.	The geometric mean of the numbers 2,4, & 8 is	
	(A) 3.67	(B) 4
	(C) 3.43	(D) 5

10.	Which of the following statement is not true for Harmonic mean?	
	(A) Harmonic mean is smaller than the mean	(B) It is based on all the values
	(C) It is an appropriate averaging rates ratios	(D) It gives equal weightage to all the values

Chapter 4

MEASURES OF DISPERSION

1.	The main disadvantage of the range is that	
	(A) It does not use all the observations in its calculations	(B) It can be influenced by an extreme value
	<u>(C) Both A and B are correct</u>	(D) None of the above

2.	Which one of the following is not a measure of dispersion?	
	(A) Range	(B) Standard deviation
	<u>(C) Second quartile</u>	(D) Co-efficient of variation

3.	Which of the following is not a measure of dispersion?	
	(A) Interquartile range	(B) Difference between the values of the largest and the smallest items
	<u>(C) Mean of the values of the largest and the smallest items</u>	(D) Standard deviation

4.	The standard deviation is	
	(A) The square of the variance	(B) Two times the standard deviation
	(C) Half the variance	<u>(D) The square root of the variance</u>

5.	The coefficient of variation is measured in	
	(A) The same units as the mean and the standard deviation	<u>(B) Percent</u>
	(C) Squared units	(D) None of the above

6.	If the original units are measured in pounds, the variance is	
	(A) also measured in pounds	<u>(B) measured in pounds squared</u>
	(C) measured in half pounds	(D) None of the above

7.	If the tail of a frequency distribution is in a positive direction (to the right), the coefficient of skewness is	
	(A) zero	<u>(B) positive</u>
	(C) negative	(D) None of the above

8.	The standard of the frequency distribution is 10, the mean is 250, the median is 250 and the mode is also 250. The coefficient of skewness is	
	<u>(A) zero</u>	(B) positive
	(C) negative	(D) None of the above

9.	Which of the following statement is true?	
	<u>(A) The standard deviation is less than the range</u>	(B) The range is less than the interquartile range
	(C) The arithmetic mean always exceeds the median	(D) The arithmetic mean always exceeds the mode

10.	Which of the following is not a property of standard deviation?	
	<u>(A) It is always a negative number</u>	(B) It is effected by extreme values in a data set
	(C) It is based on all the values in a data set	(D) It is the most widely used measure of dispersion

11.	If a distribution has zero standard deviation, then which of the following is true?	
	(A) All observations are negative	(B) All observations are positive
	<u>(C) All observations are equal</u>	(D) Number of positive values and negative vales are equal

12.	The empirical rule generally can be applied to	
	(A) <u>Bell shaped distribution</u>	(B) Any distribution
	(C) Only continuous distribution	(D) Any skewed distribution

13.	Symmetrical distributions will always have skewness equal to	
	(A) Negative	(B) Positive
	(C) <u>Zero</u>	(D) Approximately zero

14.	For a Normal distribution, the measure of Kurtosis equals to	
	(A) Zero	(B) <u>3</u>
	(C) Positive number	(D) Negative number

15.	For the given sample data set 2, 8, 10, 15, 20, 9, 18, 0, 7, 10, which is the value of coefficient of variation?	
	(A) 70.00 percent	(B) 15.50 percent
	(C) 145.00 percent	(D) <u>61,21 percent</u>

Chapter 5

INDEX NUMBERS

1.	If the price of a kg of meat was Rs.40/- in 2000 and Rs. 50/ in 2002, the simple price relative in 2002 is	
	(A) <u>125</u>	(B) 100
	(C) 80	(D) 50

2.	An un-weighted aggregates price index has a limitation that	
	(A) It is difficult to calculate	(B) <u>It is unduly influenced by the price variations of high priced commodities</u>
	(C) It is unduly influenced by the price variations of low priced commodities	(D) None of the above

3.	The best weight to be used in a quantity index calculated by the weighted average of relatives methods are:	
	(A) Base period price weights	(B) Current period price weights
	(C) Base period quantity weights	(D) <u>Base period value weights</u>

4.	The CPI is basically	
	(A) a fixed weight index	(B) a Laspeyre's index
	(C) <u>both of the above</u>	(D) none of the above

5.	The Laspeyre's price index is a weighted aggregate index in which the weights are based on	
	(A) current quantities	(B) <u>based period quintiles</u>
	(C) Mean of base and current period quantities	(D) none of the above

6.	The Paasche's price index is a weighted aggregate index in which the weights are based on	
	(A) <u>current quantities</u>	(B) based period quintiles
	(C) Mean of base and current period quantities	(D) none of the above

7.	The Laspeyre's price index is:	
	(A) <u>Upward biased</u>	(B) Downward biased
	(C) No biased	(D) none of the above

8.	The following is a price index number series: 1995, 100; 1997, 120; 2002, 150; which of the following statement is incorrect?	
	(A) prices increased by 50% from 1995 to 2002	(B) <u>prices increased by 30% from 1997 to 2002</u>
	(C) prices in 1995 were $33\frac{1}{3}\%$ lower than in 2002	(D) prices increased by 25% from 1997 to 2002

9.	The following is a price index series for Lahore based on 1990 = 100, 1995 = 120, and 2000 = 125. Which of the following statement is correct?	
	(A) prices have increased by 5% from 1995 to 2000	(B) prices in 1990 were 25% lower than in 2000
	(C) <u>prices in 2000 were 1.2% higher than in 1995</u>	(D) none of the above

10.	If wages of a group of workers increased from 1995 to 2000 by 10% and a relative price index increased by 5%; Real wages have increased over this period by:	
	(A) <u>4.8%</u>	(B) 10%
	(C) 6%	(D) none of the above

11.	Which of the statement is the for Laspeyre's index number	
	(A) it meets time reversal test	(B) it meets factor reversal test
	(C) it meets both time reversal as well as factor reversal test	<u>(D) none of the above</u>

12.	Which of the following statement is true for Paasche's index?	
	(A) it meets time reversal test	(B) it meets factor reversal test
	(C) it meets both time reversal as well as factor reversal test	<u>(D) none of the above</u>

13.	A Laspeyre's price index is:	
	(A) a cost of living index	<u>(B) a weighted index</u>
	(C) both of the above	(D) none of the above

14.	In 2000 the price for a certain type of fish was Rs.120/. per kg, and 450 tons were consumed. In 2001 the price for this type of fish was Rs.100/-per kg, and 350 tons of fish were consumed. If the simple price relative in 2000 is Rs.100/. then in 2001 simple price relative would be	
	(A) 130	(B) 100
	(C) 90	<u>(D) 83</u>

15.	The index number for a base year is always	
	(A) zero	(B) greater than 100
	(C) less than 100	<u>(D) none of the above</u>

Chapter 6

PROBABILITY

1.	A simple event is	
	(A) a collection of exactly two outcomes	(B) does not include any outcome
	<u>(C) includes one and only one outcome</u>	(D) includes more than one outcome

2.	A compound event includes	
	(A) at least four outcome	(B) one and only one outcome
	<u>(C) at least two outcomes</u>	(D) All the outcomes of an experiment

3.	The probability of an event is always	
	(A) greater than zero	(B) less than one
	<u>(C) in the range of zero and one</u>	(D) greater than 1

4.	The classical probability method is applied to an experiment that	
	(A) cannot be repeated	<u>(B) has equally likely outcomes</u>
	(C) has all independent outcomes	(D) does not have more than two outcomes

5.	The relative frequency method is applied to an experiment that	
	<u>(A) does not have equally likely outcomes but can be repeated</u>	(B) does not have equally likely outcomes and cannot be repeated
	(C) has equally likely outcomes and cannot be repeated	(D) has all independent outcomes

6.	Which of the following values cannot be the probability of an event?	
	(A) 0.82	(B) 0
	<u>(C) - 1.75</u>	(D) 0.36

7.	In a group of 400 families, 300 own houses. If one family is randomly selected from group then the probability that this family owns a house is:	
	<u>(A) 0.75</u>	(B) 0.25
	(C) 0.80	(D) 0.40

8.	Two mutually exclusive events:	
	(A) always occur together	<u>(B) cannot occur together</u>
	(C) can sometimes occur together	(D) can never occur together

9.	The two events A and B are mutually exclusive. Which one of the following statement be true?	
	<u>(A) $P(A \cap B) = 0$</u>	(B) $P(A \cap B) = 1$
	(C) $P(A \cup B) = 0$	(D) $P(A \cup B) = 1$

10.	P (A) = 0.6 and P (B) = 0.5. Which of the following statement is true?	
	(A) A and B are mutually exclusive	<u>(B) A and B are not mutually exclusive</u>
	(C) A and B are independent	(D) A and B are dependent

11.	The conditional probability of an event A given that the event B has already occurred is written as:	
	(A) $P(A \cup B)$	(B) $P(B/A)$
	(C) $P(A \cap B)$	<u>(D) $P(A/B)$</u>

12.	Two complementary events	
	<u>(A) have no common outcomes</u>	(B) have common outcomes
	(C) contain the same outcomes	(D) can have common outcomes

13.	The union of two events A and B is written as:	
	<u>(A) (A or B)</u>	(B) (A and B)
	(C) (B/A)	(D) (A/B)

14.	The intersection of two events A and B is written as:	
	(A) (A or B)	<u>(B) (A and B)</u>
	(C) (B/A)	(D) (A/B)

15.	The joint probability of two independent events A and B is:	
	(A) $P(A) + P(B)$	(B) $P(A) + P(B) - P(A \cap B)$
	<u>(C) $P(A).P(B)$</u>	(D) $P(A).(A/B)$

Chapter 7

RANDOM VARIABLES

1.	A random variable is also known as	
	(A) Chance variable	(B) Stochastic variable
	(C) Variable	<u>(D) All of these</u>

2.	The distribution function of a random variable X, denote by F(x) is defined as:	
	<u>(A)</u> $F(x) = P(X \leq x)$	(B) $F(x) = P(X \geq x)$
	(C) $F(x) = P(X = x)$	(D) None of above

3.	A discrete probability distribution may be represented by	
	(A) a table	(B) a mathematical function
	(C) a histogram	<u>(D) all of above</u>

4.	A continuous probability distribution is not represented by	
	<u>(A) table</u>	(B) a mathematical function
	(C) a graph	(D) a density function

5.	If X & Y are two independent random variables, Var(X-Y) is equal to	
	(A) $\text{Var}(X) - \text{Var}(Y)$	<u>(B) $\text{Var}(X) + \text{Var}(Y)$</u>
	(C) $\text{Var}(X) + \text{Var}(Y) - 2\text{COV}(X, Y)$	(D) None of above

6.	If X is random variable and a and b are constants, then $\text{Var}(aX+b)$ is equal to	
	<u>(A)</u> $a^2\text{Var}(X)$	(B) $\text{Var}(aX)$
	(C) $a^2\text{Var}(X) + \text{Var}(b)$	(D) $a\text{Var}(X)$

7.	Given the following distribution for a random variable X:							
	x_i	1	2	3	4	5	6	Total
	$f(x_i)$	0.10	0.20	0.20	0.25	0.15	0.10	1.00
	The standard deviation of X is							
	(A) 2.000				(B) <u>1.4654</u>			
	(C) 3.5064				(D) 2.1475			

8.	Suppose X has a p.d.f given by					
	x_i	-2	-1	0	1	Total
	$f(x_i)$	2a	3a	a	3a	1.00
	Then a is					
	(A) 0.1000		(B) <u>0.1111</u>			
	(C) 0.2000		(D) none of above			

9.	If X and Y are two random variables, $E(X+Y)$ is equal to	
	(A) $E(X) + E(Y)$	(B) $E(X) + Y$
	(C) $E(X) - E(Y)$	(D) none of above

10.	If two discrete random variables X and Y are independent, which of the following statements are true	
	(A) $P(X = 4) = P(X = 4/Y = 2)$	(B) $P(X = 4 \text{ and } Y = 2) = P(X = 4).P(Y = 2)$
	(C) $P(X = 4 \text{ and } Y = 2) \neq P(X = 4).P(Y = 2)$	(D) $P(X = 2) = P(X = 2 Y = 4)$

Chapter 8

DISCRETE PROBABILITY DISTRIBUTIONS

1.	Which of the following is not a property of a Binomial experiment?	
	(A) The successive trials are all independent	(B) The experiment is repeated a fixed number of times say n
	(C) Probability of success denoted by p, remains constant for all trials	<u>(D) There are three or more possible outcomes for each trial</u>

2.	The standard of the Binomial distribution is:	
	(A) \sqrt{np}	<u>(B) \sqrt{npq}</u>
	(C) npq	(D) pq

3.	For a Binomial distribution, the mean and variance are related by:	
	(A) $\mu < \sigma^2$	(B) $\mu = \sigma^2$
	<u>(C) $\mu > \sigma^2$</u>	(D) $\mu < \sqrt{\sigma^2}$

4.	For a Binomial distribution	
	$P(X = x) = {}^{12}C_x (0.5)^x (0.5)^{12-x}, x = 0, 1, 2, 3, \dots, 12.$	
	The mean is:	
	(A) 3	<u>(B) 6</u>
	(C) $\sqrt{6}$	(D) $\sqrt{3}$

5.	For a Poisson distribution, the mean and Variance are related by:	
	<u>(A) $\mu = \sigma^2$</u>	(B) $\mu < \sigma^2$
	(C) $\mu > \sigma^2$	(D) none of these

6.	A Binomial distribution may be approximately by a Poisson distribution when	
	(A) <u>n is large and p is small</u>	(B) n is small and p is large
	(C) n is small and p is small	(D) n is large and p is large

7.	Which of the following is not a property of Hypergeometric experiment?	
	(A) The probability of success changes on each trial	(B) <u>The successive trials are independent</u>
	(C) The experiment is repeated a fixed number of times	(D) The outcomes of each trial may be classified into one of two categories, success and failure

8.	For a Negative Binomial distribution, the mean and variance are related by:	
	(A) $\mu = \sigma^2$	(B) <u>$\mu < \sigma^2$</u>
	(C) $\mu > \sigma^2$	(D) none of above

9.	Which of the following is not a property of a multinomial experiment?	
	(A) The successive trials are all independent	(B) The experiment is repeated a fixed number of times
	(C) The outcomes of each trial may be classified into one of k categories (k ≥ 2)	(D) <u>The probability of success changes on each trial</u>

Chapter 9

CONTINUOUS PROBABILITY DISTRIBUTIONS

1.	The area under the Normal curve between -3.0 and -2.0 is	
	(A) 0.0228	(B) 0.4472
	<u>(C) 0.02165</u>	(D) 0.3413

2.	Which is the characteristic of the Normal distribution?	
	(A) It is bell shaped and symmetric curve	(B) For any normal r.v. X. $P(X \leq \mu) = P(X \geq \mu)$
	(C) The total area under the curve is unity	<u>(D) All of the above</u>

3.	All normal distributions are:	
	(A) Symmetrical	(B) Having two parameters μ & σ
	(C) Bell shaped	<u>(D) All of above</u>

4.	For a standard normal probability distribution, the mean and standard deviation are:	
	(A) $\mu = 1$ & $\sigma = 1$	<u>(B)</u> $\mu = 0$ & $\sigma = 1$
	(C) $\mu = 50$ & $\sigma = 10$	(D) All of above

5.	The middle area under the Normal curve with $\mu \pm 2\sigma$ is	
	(A) 0.6827	(B) 1.0000
	<u>(C) 0.9545</u>	(D) 0.9973

6.	For a Normal distribution with $\mu = 50$ & $\sigma = 10$, how much area will be scanned $X = 50$?	
	(A) 0.35	(B) 0.95
	(C) 0	<u>(D) 0.50</u>

7.	In a Normal distribution, mean deviation is equal to	
	(A) $(1) \sigma$	<u>(B) 0.8σ</u>
	(C) 0.6745σ	(D) 2.0σ

8.	The Normal distribution will be less spread out when	
	(A) The mean is small	(B) The median is small
	(C) The mode is small	<u>(D) The standard deviation is small</u>

9.	The life time of general tires is normally distributed with an average of 40,000 kilometers and a standard deviation of 5000 kilometers. The probability that a randomly selected tire will last more than 50,000 kilometers is	
	(A) 0.6789	(B) 0.9772
	<u>(C) 0.0228</u>	(D) 0.1600

10.	Which of the following statement is correct for Standard normal distribution?	
	(A) $P(Z > -2.0) = P(Z > 2.0)$	<u>(B) $P(Z > -2.0) = P(Z < 2.0)$</u>
	(C) $P(Z > -2.0) = P(Z < -2.0)$	(D) All of above

Chapter 10

SIMPLE REGRESSION AND CORRELATION

1.	When slope of regression line is negative, the following statistics is also negative	
	(A) r	(B) r^2
	(C) Standard error of estimate	(D) Standard error of slope coefficient

2.	If there is no linear relationship between the two variables then which one of the following does not hold?	
	(A) $a = 0$	(B) $b = 0$
	(C) r^2	(D) The regression line is either vertical, or horizontal

3.	If the correlation coefficient $r = 0.7$, then the proportion of variation for Y explained by X is	
	(A) <u>0.49</u>	(B) 0.50
	(C) 0.70	(D) $\sqrt{0.70}$

4.	The dependent variable is also known as	
	(A) Explained variable	(B) Response variable
	(C) Predicted variable	(D) <u>All of above</u>

5.	If the regression equation $Y = \alpha + \beta x_i + \varepsilon$, both X and Y variables are	
	(A) Random	(B) Fixed
	(C) <u>X is fixed and Y is random</u>	(D) Y is fixed and X is random

6.	The variation of the T values around the regression line measured by	
	(A) $\sum_{i=1}^n (Y_i - \bar{Y})^2$	<u>(B)</u> $\sum_{i=1}^n (Y_i - \hat{Y})^2$
	(C) $\sum_{i=1}^n (\hat{Y} - \bar{Y})^2$	(D) none of above

7.	If both the dependent and independent variables increase simultaneously, the correlation coefficient will be in the range of	
	<u>(A) 0 to +1</u>	(B) 0 to -1
	(C) 1 to 2	(D) -1 to +1

8.	Which of the following statement is incorrect about correlation coefficient?	
	<u>(A) It passes through the means of the data</u>	(B) It is symmetrical with respect to X and Y
	(C) It is independent of origin and scale	(D) It is the geometric mean between the two regression coefficients

9.	If the unexplained variation between variables X and Y is 0.40 then r^2 is	
	(A) 0.75	<u>(B) 0.60</u>
	(C) 0.40	(D) none of the above

10.	The strength of a linear relationship between two variables Y and X is measured by	
	(A) r^2	(B) b_{yx}
	<u>(C) r</u>	(D) none of the above

Chapter 11

MULTIPLE REGRESSION AND CORRELATION

1.	The range of multiple correlation coefficient is	
	(A) -1 to +1	(B) 0 to +infinity
	<u>(C) 0 to 1</u>	(D) none of above

2.	The range of Partial correlation coefficient is	
	(A) 0 to 1	<u>(B) -1 to +1</u>
	(C) 0 to infinity	(D) -1 to 0

3.	If the multiple correlation coefficient $R_{3.12} = 1$, then it implies a	
	<u>(A) perfection relationship</u>	(B) high relationship
	(C) weak linear relationship	(D) perfect linear relationship

4.	In the regression analysis, the explained variation of the dependent variable Y is given by	
	(A) $\sum_{i=1}^n (Y_i - \bar{Y})^2$	(B) $\sum_{i=1}^n (Y_i - \hat{Y})^2$
	<u>(C) $\sum_{i=1}^n (\hat{Y} - \bar{Y})^2$</u>	(D) $\sum_{i=1}^n (Y_i - \hat{Y})$

5.	Which of the following is not a standard deviation?	
	(A) Standard error of the slope coefficient	<u>(B) Mean square errors</u>
	(C) Standard error of estimator	(D) Standard deviation of the Y variable

6.	The coefficient of determination in multiple regression is given by	
	(A) $R_{Y.13}^2 = 1 - (SST / SSE)$	(B) $R_{Y.13}^2 = 1 - (SSR / SSE)$
	(C) $R_{Y.13}^2 = 1 - (SST / SSR)$	<u>(D)</u> $R_{Y.13}^2 = 1 - (SSE / TSS)$

7.	The slope b_1 in the multiple regression equation $Y = a + b_1X_1 + b_2X_2$ measures	
	(A) the amount of variation in \hat{Y} explained by X_1	(B) the change in \hat{Y} per unit change in X_1
	<u>(C)</u> the change in \hat{Y} per unit change in X_1 , holding X_2	(D) the change in \hat{Y} per unit change in X_2 , holding X_1

8.	The predicted value of Y for $X_1 = 1, X_2 = 5$ and $X_3 = 10$ by using the regression line $\hat{Y} = 30 - 10X_1 + 18X_2 - 7.5X_3$ is	
	(A) 45	(B) 15
	<u>(C) 35</u>	(D) 50

9.	Which of the following statement remains always true?	
	<u>(A) The coefficient of multiple determination will increase when new variables are added</u>	(B) The coefficient of multiple determination will decrease when new variables added
	(C) The adjusted coefficient of multiple determination will not decrease when new variables are added	(D) Both A & C

10.	Which of the following relationship holds	
	(A) $r_{13.2} = \sqrt{b_{12.3} * b_{21.3}}$	<u>(B)</u> $r_{13.2} = \sqrt{b_{13.2} * b_{31.2}}$
	(C) $r_{13.2} = \sqrt{b_{23.1} * b_{32.1}}$	(D) All of above

Chapter 13

TIME SERIES ANALYSIS

1.	Decomposing a time series means that past data is distributed into components of:	
	<u>(A) Trend, cycle, seasonal and random</u>	(B) Long term, medium term, and short term variations
	(C) Constants and Variations	(D) All of above

2.	The seasonal variation in the time series is computed by	
	(A) Ratio to moving average method	(B) Ratio to trend average method
	(C) Link relative method	<u>(D) All of above</u>

3.	The seasonal variation in the time series is computed by	
	(A) Trend	(B) Cyclical
	<u>(C) Seasonal</u>	(D) Irregular

4.	After detrending the data, the time series (multiplicative model) consists of	
	(A) $Y = TSCI$	(B) $Y = TSI$
	<u>(C) $Y = CSI$</u>	(D) None of above

5.	If a time series changes an exact constant percentage then	
	(A) A good fitted line cannot be obtained	(B) A linear line fitted to the data gives a perfect fit
	<u>(C) A linear line fitted to the logarithms data gives a perfect fit</u>	(D) A nonlinear is required to be fitted

6.	Dividing the original time series by moving average, the time series (multiplicative model) consist of	
	<u>(A) $Y = SI$</u>	(B) $Y = CS$
	(C) $Y = TS$	(D) $Y = TC$

7.	A company's trend figure for sales for December 2007 is Rs.2,00,000/-. Actual sale during that period were Rs.1, 60,000/- and $C \cdot I = 0.80$. The value for seasonal index is	
	(A) <u>100</u>	(B) 125
	(C) 60	(D) 64

8.	A second degree trend line is $\hat{Y} = 15 - 0.1t + 0.05t^2$ where Y is sales (in thousands) and t is time (in years) and t = 1 for 1995. What is the predicted fit figure for year 2007.	
	(A) 20,000	(B) <u>22,150</u>
	(C) 18,000	(D) 15,000

9.	If a 4-quarter moving average is projected to obtain short-term forecasts, it contains the following components	
	(A) <u>TC</u>	(B) TS
	(C) CSI	(D) C only

10.	Exponential smoothing is a forecasting method which	
	(A) uses the actual data, not the forecast data	(B) requires to fit a mathematical model to the data
	(C) gives equal weight to all the periods	(D) <u>All of above</u>