Chapter 16

Analysis of Time Series

Identify the Times Series Tend

1. Increased demand for foot-wears before Eid.

(a) Secular Trend

(b) Seasonal Variations

(c) Cyclical fluctuations

(d) Irregular movements

2. The decline in death rate due to advancement in science.

(a) Secular Trend

(b) Seasonal Variations

(c) Cyclical fluctuations

(d) Irregular movements

3. A steel strike, delaying production for a week.

(a) Secular Trend

(b) Seasonal Variations

(c) Cyclical fluctuations

(d) Irregular movements

4. Rise in the prices of certain consumer goods due to tax increase in the annual budget.

(a) Secular Trend

(b) Seasonal Variations

(c) Cyclical fluctuations

(d) Irregular movements

5. An era of prosperity in a business.

(a) Secular Trend

(b) Seasonal Variations

(c) Cyclical fluctuations

(d) Irregular movements

6. The festival sale.

(a) Secular Trend

(b) Seasonal Variations

(c) Cyclical fluctuations

(d) Irregular movements

7. The production of sugar recorded for 1986, 1987, …, 1992.

(a) Secular Trend

(b) Seasonal Variations

(c) Cyclical fluctuations

(d) Irregular movements

8. The weekly statement of the sale of pens.

(a) Secular Trend

(b) Seasonal Variations

(c) Cyclical fluctuations

(d) Irregular movements

9. A fire in a factory delaying production for 3 weeks.

(a) Secular Trend

(b) Seasonal Variations

(c) Cyclical fluctuations

(d) Irregular movements

10. An after Eid sale in a departmental store.

(a) Secular Trend

(b) Seasonal Variations

(c) Cyclical fluctuations

(d) Irregular movements

11. A need for increased wheat production due to a constant increase in population.

(a) Secular Trend

(b) Seasonal Variations

(c) Cyclical fluctuations

(d) Irregular movements

12. The monthly rainfall in inches in a city over a 5 – year period.

(a) Secular Trend

(b) Seasonal Variations

(c) Cyclical fluctuations

(d) Irregular movements

13. A recession in a business.

(a) Secular Trend

(b) Seasonal Variations

(c) Cyclical fluctuations

(d) Irregular movements

14. An increase in employment during summer months.

(a) Secular Trend

(b) Seasonal Variations

(c) Cyclical fluctuations

(d) Irregular movements

15. A continually increasing demand for smaller automobiles.

(a) Secular Trend

(b) Seasonal Variations

(c) Cyclical fluctuations

(d) Irregular movements

Choose the correct answer

16. The graph of a time series is called _____.

(a) Histogram

(b) Historigram

(c) Ogive

(d) Polygon

17. Secular trend is what kind of variation?

(a) Short Term

(b) Long Term

(c) Inconsistent

(d) Short Term and Inconsistent

18. Seasonal variations are _____ in nature.

(a) Irregular

(b) Regular

(c) Uncertain

(d) Stochastic

19. Secular trend has _____ and _____.

(a) Booms, Depressions

(b) Smoothness, Steadiness

(c) Fluctuations, Hikes

(d) Irregularity, Uncertainty

20. Irregular variations are not _____ in nature.

(a) Uncertain

(b) Random

(c) Regular

(d) Stochastic

21. The increase in the school fee in private schools is a / an _____.

(a) Secular Trend

(b) Seasonal Variations

(c) Cyclical fluctuations

(d) Irregular movements

22. The increase in the number of patients in the hospitals is like _____ in a time series.

(a) Secular Trend

(b) Seasonal Variations

(c) Cyclical fluctuations

(d) Irregular movements

23. The increase in the number of patients of heat stroke in summer is like _____ in a time series.

(a) Secular Trend

(b) Seasonal Variations

(c) Cyclical fluctuations

(d) Irregular movements

24. The secular trend is measured by a straight line when a time series has a / an _____ trend.

(a) Upward

(b) Downward

(c) Linear

(d) Upward and Downward

25. The secular trend is measured by Semi – Averages method when trend is _____.

(a) Linear

(b) Quadratic

(c) Both Linear and Quadratic

(d) Exponential

26. The straight line is fitted to a time series when the movements in the time series are _____.

(a) Linear

(b) Quadratic

(c) Exponential

(d) Cubic

27. In the measurement of secular trend by the method of least squares, the number of years can be:

(a) Odd

(b) Even

(c) Odd and Even

(d) None of these

28. For a least square linear trend, $\hat{y} = a + bx$, the b is _____ of the line and a is _____.

(a) an intercept, the slope

(b) the slop, an intercept

(c) dependent variable, independent variable

(d) independent variable, dependent variable

29. Which of the following statement is NOT true about seasonal variations?

(a) Seasonal variations can be used for yearly, quarterly and monthly data.

(b) Seasonal variations can be measured only when the time series contains yearly values

(c) Seasonal variations can have cyclical variations.

(d) Seasonal variations are because of different seasons in a time period, whether it can be festivals, weather or any other special event.

30. In the measurement of secular trend, the moving averages _____.

(a) Give the trend in a straight line

(b) Measure the seasonal variations

(c) Smooth out a time series

(d) None of them

31. For a least square trend $\hat{y} = a + bx$,

(a) $\sum y < \sum \hat{y}$

(b) $\sum \hat{y} = 0$

(c) $\sum y = \sum \hat{y}$

(d) None of them

32. For a least square trend $\hat{y} = a + bx$, the $\sum (y - \hat{y})^2 = 0$ when

(a) All the y – values lie on the line.

(b) All the y – values are positive.

(c) All the y – values lie above the line.

(d) None of them