M COM ENTRANCE

BUSINESS STATISTICS PRACTICE QUESTIONS

CH 11: TIME SERIES

1. In moving average method we cannot find trend values of :
   A Middle Period
   B Starting Periods
   C End Periods
   D Starting and End Periods

2. Prosperity, Recession and depression in a business is an example of
   A Cyclical Trend
   B Irregular Trend
   C Seasonal Trend
   D Secular Trend

3. Seasonal variations are
   A Short term variation
   B Sudden variation
   C Long term variation
   D Medium term variation

4. In the theory of time series, shortage of certain consumer goods before annual budget is due to
   A Seasonal Variation
   B Cyclical Variation
   C Irregular Variations
   D Secular Trend

5. The most commonly used mathematical method for measuring the trend is
   A Semi Average
   B Least Squares
   C Moving Average
   D Free Hand Curve

6. A fire in a factory delaying production for some weeks is
   A Irregular Trend
   B Secular Trend
   C Cyclical Trend
   D Seasonal Trend

7. A rise in sales before festivals is an example of
   A Secular Trend
   B Seasonal Trend
   C Irregular Trend
   D Cyclical Trend

8. The moving averages in a time series are free from the influence of:
   A seasonal and cyclic variations
   B seasonal and irregular variations
   C trend and cyclical variations
   D trend and random variations

9. Link relatives in a time series remove the influence of
   A the trend
   B cyclic variation
   C irregular variation
   D all of the above

10. Increase in the number of patients in the hospital due to heat stroke is:
   A Secular trend
   B Irregular variation
   C **Seasonal variation**
   D Cyclical variation

11. The trend equation for a firm is: Y = 88 + 2X [Origin: 2012; X units = 1 year; Y units = Annual Sales]. The estimated sales for 2020 would be:
   A 128
   B 104
   C 72
   D Cannot be estimated

12. Given the trend equation: Y = 75.28 + 4.32X [Origin: 2010; X units = 1 year, Y units = Annual Production]. The revised equation when the origin is shifted to 2015 is:
   A Y = 96.88 + 4.32X
   B Y = 53.68 + 4.32X
   C Y = 140.08 + 4.32X
   D Y = 10.48 + 4.32X

13. The monthly trend equation for the following annual trend is:
   Y = 150 + 24X [Origin: 2014; X units = 1 year; Y units = Annual Production]
   A 12.5 + 24X
   B 12.5 + 2X
   C 150 + 0.17X
   D 12.5 + 0.17X

14. If we first subtract the trend value (T) for each quarter from the original value (Y), then average the values for a given quarter over successive years, then for short term data we get :
   A Unseasonal data
   B Cyclical component
   C Deseasonalised data
   D Seasonal Component

15. In time series seasonal variations can occur within a period of:
   A Four years
   B Three years
   C One year

D Nine years

16. Following is the trend equation of production in a sugar factory:

$$Y = 88.8 + 1.38X$$

[Origin: 2012; X units = 1 year, Y units = Annual Production (in thousand quintals]

The monthly increase in the production of sugar is:

A 88.8
B 7.4
C 1.38
D 0.115

17. A trend of the form $Y = a + bX + cX^2$ is called

A linear
B parabolic
C exponential
D logarithmic

18. A recession in the industry is associated to:

A Trend
B Seasonal component
C Cyclic component
D Random component

19. Decline in mortality rate due to improvement in medical science is associated to the

A Trend
B Seasonal component
C Cyclic component
D Random component

20. In the study of sales, a company obtained the following trend equation:

$$Y_C = 16 + 2X$$

[Origin: 2015; X units = one year; Y_C = total number of units sold]

By what year the company's expected sales have equalled to its present capacity of 30 units?

A 2030
B 2025
C 2022
D 2020

21. The following is a monthly trend equation: $Y = 20 + 2X$

[Origin: Jan 2012; X unit = 1 month; Y unit = monthly sales in thousand rupees]

The annual trend equation is:

A $Y = 240 + 24X$
B $Y = 240 + 288X$
C $Y = 372 + 144X$
D $Y = 372 + 288X$

22. The following is a quarterly trend equation for sales (in thousand rupees) of a commodity:

$$Y = 130 + 1.8X$$

[Origin: First quarter of 2015; X unit = 1 quarter; Y = average quarterly sales]

Estimate the sale for the year 2022.

A 725.2
B 643.7
C 548.8
D 142.6

23. The trend equation for yearly sales of a product with 1st July 2001 as origin is:

$$Y = 96 + 28.8X$$

Compute the trend values for August 2001.

A 9.3
B 9.2
C 8.3
D 8.2

24. Periodic movements with duration longer than a year are called:

A Scalar movements
B Cyclic movements
C Seasonal movements
D Irregular movements

25. Given the trend equation: Y = 110 + 1.5X [Origin: 2018; X unit = one year; Y = Annual sales] Shift the origin to 2013.

A 115.5 + 1.5X
B 107.5 + 1.5X
C 112.5 + 1.5X
D 102.5 + 1.5X