

LO.a: Explain principles of technical analysis, its applications, and its underlying assumptions.

1. Technical analysis *least likely* relies upon:
 - A. price and volume information.
 - B. market trends and patterns.
 - C. financial statements.
2. Which of the following is *most* useful for a technical analyst?
 - A. Details about the type and features of the security under analysis.
 - B. Trading data of the security.
 - C. Financial ratios of the security.
3. Which of the following statements is *most* consistent with the underlying assumptions of technical analysis?
 - A. It is not possible to earn extra profit and beat the market.
 - B. With the help of technical analysis; it is possible to earn extra profit and beat the market.
 - C. When technical analysis is used with fundamental analysis; it is possible to earn extra profit and beat the market.
4. One of the key advantages of technical analysis over fundamental analysis is that:
 - A. technical analysts have actual and observable data available to arrive at the results.
 - B. technical analysis incorporates the relevant economic data to arrive at the results.
 - C. technical analysis can be effectively put into use for thinly traded stocks.
5. Which of the following is *least likely* the difference between technical and fundamental analysis?
 - A. Technical analysis focuses on analyzing markets, while fundamental analysis takes into account financial, economic, political, and societal analysis.
 - B. Technical analysis is driven by price and volume data, whereas fundamental analysis also incorporates data that are external to the market.
 - C. Fundamental analysts have more concrete data to work with, while technicians use data based on estimates and assumptions.
6. Which of the following is *least likely* an assumption made in technical analysis?
 - A. Market trends and patterns reflect the rational behavior of human beings.
 - B. Market trends and patterns are predictable to an extent as they tend to repeat themselves.
 - C. Market prices are a reflection of the collective knowledge and sentiment of several varied participants.

LO.b: Describe the construction of different types of technical analysis charts and interpret them.

7. Which of the following charts does not show the high and low prices for each trading period?

- A. Bar chart.
 - B. Point and figure chart.
 - C. Candlestick chart.
8. The horizontal axis *least likely* represents discrete units of time in a:
- A. bar chart.
 - B. candlestick chart.
 - C. point and figure chart.
9. The tools a technical analyst is *most likely* to use to depict four prices per data point entry are:
- I. A bar chart.
 - II. A candlestick chart.
 - III. A line chart.
- A. I and II.
 - B. I and III.
 - C. II and III.
10. Professor Simons comes across the following statements regarding the tools used in technical analysis.
- Statement I:** In a candlestick chart, the body of the candle is shaded if the opening price is lower than the closing price.
- Statement II:** Analyzing a candlestick chart is faster as the price movements are more visible in a candlestick chart than in a bar chart.
- Statement III:** The horizontal axis of a point and figure chart represents the number of changes in price.
- Which of the statements is *most likely* accurate?
- A. Statement II only.
 - B. Statements II and III only.
 - C. Statements I and III only.
11. Who, among the following, will *most likely* use a logarithmic scale on the vertical axis of charts?
- A. Christopher, who is analyzing the performance of GE stock for the past 2 years.
 - B. Richard, who is analyzing the performance of the US Treasury Bill for the past 6 months.
 - C. Pamela, who is analyzing the performance of Microsoft stock since 1990.
12. Which of the following technical analysis techniques is used to compare the performance of an asset with that of some benchmark?
- A. A candlestick chart.
 - B. A point and figure chart.
 - C. Relative strength analysis.

LO.c: Explain uses of trend, support, resistance lines, and change in polarity.

13. A price range in which selling is sufficient to stop the rise in price is *best* described as:
- A. support.
 - B. resistance.
 - C. continuation pattern.
14. The concept when buying activity during a low price range is sufficient to halt a price decline is *best* described as:
- A. change in polarity.
 - B. resistance.
 - C. support.
15. Google's stock price is increasing and reaches a price range wherein selling activity is expected to emerge that prevents further price increases. This situation is *best* described as a:
- A. resistance level.
 - B. change in polarity point.
 - C. support level.
16. Statement 1: In an uptrend, a trend line connects the higher highs and higher lows of security prices.
Statement 2: In a downtrend, a trend line connects the lower highs and lower lows of security price.
Which of the above statements is most likely true?
- A. Statement 1.
 - B. Statement 2.
 - C. Both.
17. Once support level is breached, it becomes resistance level and once resistance level is breached it becomes support level. What is the *most* appropriate term for this concept?
- A. Head and shoulder pattern.
 - B. Double top pattern.
 - C. Change in polarity.
18. Which of the following indicates the start of an uptrend?
- A. Breakout.
 - B. Breakdown.
 - C. Price touching resistance level.
19. Which of the following statements regarding trend lines is *most* accurate?
- A. An uptrend for a security is when the price goes to the higher highs and higher lows.
 - B. In a downtrend, demand is more than supply.
 - C. To draw a downtrend line, the technician draws a line connecting the lows of the price chart.

20. Which of the following is true for support and resistance?
- A. Support is a lower price range in which selling activity is sufficient to stop a decline in price.
 - B. Resistance is a high price range in which selling activity is sufficient to stop an increase in price.
 - C. The change in polarity principal states that a breached resistance level cannot become a support level.

LO.d: Describe common chart patterns.

21. While analyzing the daily price chart of The Peacock Company, a technical analyst observed three troughs at roughly the same price level. This chart pattern is *most accurately* described as:
- A. inverse head and shoulders.
 - B. triple bottoms.
 - C. head and shoulders.
22. In technical analysis, a chart pattern where the left segment shows a decline followed by a reversal to the starting price level, the middle segment shows a more pronounced decline than in the first segment and again a reversal to near the starting price level, and the third segment is a mirror image of the first segment, is *best* described as:
- A. head and shoulders.
 - B. triple bottom.
 - C. inverse head and shoulders.
23. Sarah, a technical analyst, observes a head and shoulders pattern in a stock she has been following. She notes the following information:

Head Price	\$37.50
Shoulder Price	\$31.20
Neckline Price	\$28.25

Her estimated price target is *closest* to:

- A. \$19.00.
- B. \$21.95.
- C. \$24.90.

Use the following information to answer questions 24 and 25.

- 1st Trading Session: Price - \$80
- 2nd Trading Session: Price - \$110
- 3rd Trading Session: Price - \$90
- 4rd Trading Session: Price - \$130
- 5th Trading Session: Price - \$90

6th Trading Session: Price - \$110

7th Trading Session: Price - \$70

24. What chart pattern do the security prices *most likely* represent?
- A. Triangle Pattern.
 - B. Double Bottom.
 - C. Head and Shoulder.
25. Based on the available information, what is the target price of the security?
- A. \$50.
 - B. \$60.
 - C. \$70.
26. Which one of the following indicates strengthening prices and a future uptrend?
- A. Double top.
 - B. Double Bottom.
 - C. Rectangles.
27. Chart patterns can be divided into which of the following two categories?
- A. uptrend and downtrend.
 - B. reversal patterns and continuation patterns.
 - C. converging patterns and diverging patterns.
28. Simon Harrison, a technical analyst at Zebra Securities Ltd., recently started following a company called Orange Ltd. He believes the share price of Orange Ltd. is following a head and shoulders pattern. Over the past few weeks, the share price peaked \$80 and today's closing price is \$69. Given that the neckline is estimated to be \$73, the price target is *closest* to:
- A. \$62.
 - B. \$66.
 - C. \$77.
29. The following chart is for the Philadelphia Banking Index.



Which of the following chart patterns has this index *most likely* been following?

- A. Double tops and bottoms.
- B. Triple tops and bottoms.
- C. Inverse head and shoulders.

30. Which of the following is not a continuation pattern?

- A. Flag.
- B. Pennant.
- C. Triple bottom.

LO.e: Describe common technical analysis indicators (price-based, momentum oscillators, sentiment, and flow of funds).

31. Which of the following is *least likely* an input required in calculating the moving average?

- A. Traded volume data.
- B. Traded price Data.
- C. Number of periods.

32. Which of the following is *most likely* a price based indicator?

- A. Volatility Index.
- B. Short Interest Ratio.
- C. Relative Strength Index.

33. Momentum Oscillators are *most likely* used to:

- A. indicate an overbought or oversold position.
- B. set the target price.
- C. analyze the movement of price of security with respect to economic changes.

34. The “%K” line in a stochastic oscillator represents the:

- A. difference between the latest price and the recent high as a percentage of the difference between recent high and low.
 - B. difference between the latest price and the recent low as a percentage of the difference between recent high and low.
 - C. 3-period average of the %D line.
35. No. of Issues Advancing – 950 Volume Advancing – 98,986,987
No. Of issues Declining – 545 Volume Declining – 57,874,589
Based on the available information what will be the TRIN value for the index?
- A. 1.0191.
 - B. 0.9890.
 - C. 1.0219.
36. Statement 1: An increase in new equity issuance (IPO) suggests that the upward price trend is sustainable for long term.
Statement 2: An increase in new equity issuance (IPO) suggest that the upward price trend is about to turn down.
Which statement is *most likely* true?
- A. Statement 1.
 - B. Statement 2.
 - C. Neither statement.
37. Which of the following statements regarding moving averages is *most* accurate?
- A. A dead cross is considered bearish.
 - B. Moving averages are difficult to construct.
 - C. When a short-term moving average crosses a longer-term moving average from above, the movement is considered bullish.
38. A technical analyst is executing a contrarian strategy, whereby he sells a security when the price reaches a certain level, and buys the security when it drops to another certain level.
Which of the following price based technical indicators is he *most likely* using?
- A. Bollinger Bands.
 - B. Moving averages.
 - C. Relative strength index.
39. Which of the following analysts is *least likely* to use momentum oscillators?
- A. Elizabeth, who is determining the strength of a trend in terms of overbought and oversold levels.
 - B. Patrick for making short-term trading decisions.
 - C. Samuel, who intends to measure the relative extent to which money is moving into or out of rising and declining stocks.
40. Which of the following measures is *least likely* to have an upper or a lower limit?
- A. Momentum oscillator.

- B. Moving average convergence/divergence.
 - C. Stochastic oscillator.
41. Which of the following statements is *most likely* correct about the put/call ratio?
- A. A put/call ratio is a type of flow-of-funds indicators.
 - B. A put/call ratio is the ratio of the price of put options traded to the price of call options traded.
 - C. A put/call ratio is the ratio of the volume of put options traded to the volume of call options traded.
42. A technical analyst compiles the following information regarding a company and the market:
RSI: 78.
TRIN: 1.30
The 15-day moving average of the share price rose through the 150-day moving average.
Which of the following interpretations is *least likely* correct?
- A. The movement is a dead cross.
 - B. The RSI is indicative of a bearish movement.
 - C. According to TRIN, there is more volume in declining stocks than in advancing stocks.

LO.f: Explain how technical analysts use cycles.

43. Kondratieff wave is a cycle of:
- A. 44 years.
 - B. 54 years.
 - C. 64 years.

LO.g: Describe the key tenets of Elliott Wave Theory and the importance of Fibonacci numbers.

44. In Elliott Wave Theory, the pattern commonly exhibited by Wave 2 can be *best* described as a(n):
- A. basing pattern consisting of five smaller waves.
 - B. Fibonacci ratio percentage retracement composed of three smaller waves.
 - C. uptrend moving above the high of Wave 1 and consisting of five smaller waves.
45. As per Elliot wave theory, which of the following is the longest wave/cycle?
- A. Minute.
 - B. Minuette.
 - C. Subminuette.
46. Which of the following ratios is *most likely* used to set price targets?
- A. Put call ratio.
 - B. Short interest ratio.
 - C. Fibonacci ratio.

47. Which of the following is *least likely* mentioned in the Elliott Wave theory?
- A. Primary wave.
 - B. Intermediate wave.
 - C. Secondary wave.
48. Which of the following analyses is based on the Fibonacci sequence?
- A. Elliott Wave Theory.
 - B. Kondratieff wave.
 - C. Stochastic oscillators.

LO.h: Describe intermarket analysis as it relates to technical analysis and asset allocation.

49. John Murphy noted that all markets are interrelated and that these relationships are strengthening with globalization of the world economy. In this context if the bond prices increase what will be the *most likely* impact on equities and commodities?
- A. Decreasing equity and increasing commodity prices.
 - B. Increasing equity prices and decreasing commodity prices.
 - C. Decreasing equity and commodity prices.
50. Which of the following is a *most* commonly used tool to identify intermarket relationships?
- A. Relative strength analysis.
 - B. Relative strength index.
 - C. Momentum oscillators.
51. Inter-market analysis is *least likely* used for:
- A. identifying investment opportunities within industrial sectors.
 - B. allocating funds across national markets.
 - C. pricing futures and options.
52. Global markets are inter-related and these relationships are strengthening with globalization. Which of the following tools do analysts usually use to study inter-market relationships?
- A. Arms index.
 - B. Relative strength analysis.
 - C. Stochastic oscillators.

Solutions

1. C is correct. Technical analysis is the study of market trends or patterns and relies upon price and volume data.
2. B is correct. Technical Analysis is based on trading data of security. This includes the price and volume data of past. The detail about the type and features of the security is not relevant for technical analysis. Financial Ratios are used in fundamental analysis and it does not have any application to the technical analysis.
3. B is correct. The underlying assumption of technical analysis is that the market prices reflect both rational and irrational investor behavior. The assumption of technical analysis contradicts with this theory and hence it implies that with the help of technical analysis; it is possible to earn extra profit and beat the market.
4. A is correct. The key advantage of technical analysis is that it is based on actual market data which is easily observable and is not subject to manipulation. Fundamental analysis is based on many assumptions and also on accounting data which is subject to manipulation.
5. C is correct. The technician has more concrete data to work with, while the fundamental analyst uses data based on estimates and assumptions as he makes use of financial statements.
6. A is correct. Market trends and patterns reflect the irrational behavior of human beings.
7. B is correct. A point and figure chart is basically used to map the change in direction of share prices. Only the opening and closing price is incorporated into point and figure chart.
8. C is correct. In a point and figure chart the horizontal axis does not represent discrete units of time.
9. A is correct. The line chart has one data point per interval; the bar chart and candlestick chart have four which include the high price, low price, opening price, and closing price.
10. B is correct. In a candlestick chart, the body of the candle is shaded if the opening price is greater than the closing price. So, Statement I is incorrect.
11. C is correct. A logarithmic scale is used when the data move through a range of values representing several orders of magnitude, especially in this case covering the stock price over 25 years.
12. C is correct. Relative strength analysis is used to compare the performance of a particular asset with that of some benchmark.

13. B is correct. Resistance is defined as a price range in which selling is sufficient to stop the rise in price. Support is the opposite of resistance and is defined as a low price range in which the buying activity is sufficient to stop the decline in price.
14. C is correct. Support is defined as a low price range in which buying activity is sufficient to stop the decline in price.
15. A is correct. At a resistance level, selling activity is expected to emerge that prevents further price increases.
16. C is correct. An uptrend is when the trend line connects the higher highs and higher lows and a downtrend is when a trend line connects to lower highs and lower lows. Hence, both the statements are correct.
17. C is correct. This concept is called change in polarity. Once the price goes beyond the resistance level it shows high demand than supply above resistance level and on price returning to the resistance level the demand again rises which lifts the price up and hence the level which was earlier a resistance level now becomes support level. Double top and head and shoulder are reversal patterns.
18. A is correct. Breakout is the term generally used when the price rises above downtrend line and generally indicates the start of uptrend. Breakdown indicates the start of downtrend. Resistance level is the level at which the price bounces back down due to low demand and high supply.
19. A is correct. In a downtrend, supply is more than demand. To depict a downtrend line, the technician draws a line connecting the highs of the price chart.
20. B is correct. Support is a lower price range in which buying activity is sufficient to stop the decline in the price. The change in polarity principal states that when a resistance level is breached, it becomes a support level.
21. B is correct. Three troughs at roughly the same price level are described as triple bottoms. The head and shoulders and inverse head and shoulders are incorrect choices as their price levels are distinctly different unlike the triple bottoms.
22. C is correct. An inverse head and shoulders pattern consists of a left segment that shows a decline followed by a reversal to the starting price level, a middle segment that shows a more pronounced decline than in the first segment and again a reversal to near the starting price level, and a third segment that is roughly a mirror image of the first segment.
23. A is correct. Price target = Neckline – (Head – Neckline)
 $= 28.25 - (37.5 - 28.25) = 19.00.$

24. C is correct. The movement of the price shows the creation of head and shoulder pattern. The price rises from the level of \$70 to \$110 and again falls back to \$90. It shows the creation of left shoulder and a fall back. Price of \$130 is a creation of head and when it goes to \$110 from the fall to \$90, it creates the right shoulder. Finally, when it breaks the neckline at \$90 and goes down to \$70, it shows the completion of the head and shoulder pattern.
25. A is correct. In a head and shoulder pattern, the target price is arrived at using the following steps:
 Target Price = Neckline – (Highest Price – Neck Line) = 90 – (130 – 90) = \$50
26. B is correct. A double bottom is reversal pattern of downtrends. Hence, it indicates the strengthening of prices and a future uptrend.
27. B is correct. The two broad categories are reversal patterns and continuation patterns.
28. B is correct. Price target = Neckline – (Head – Neckline) = 73 – (80 – 73) = \$66.
29. C is correct. The pattern shown in the diagram is inverse head and shoulders.
30. C is correct. Triple bottom is a reversal pattern and not a continuation pattern.
31. A is correct. Moving average does not take volume in to consideration. While calculating moving average only the date of price and the number of periods (discrete time units) is taken into consideration.
32. C is correct. Relative strength index is a price based indicator. RSI compares security's gains with its losses over a period of time. Other two are non-price based indicators.
33. A is correct. The most known use of momentum oscillators is to indicate the overbought or oversold position of a security. Thus, it helps in providing signal for buying or selling security but it does not help to set the target price. Economic conditions neither affect technical analysis nor are they used in technical analysis.
34. B is correct. The %K line is the difference of latest price and lowest price in defined time period divided by the difference between highest and the lowest price over the defined time period. The %D line is the 3-period average of the %K line.
35. A is correct.
 TRIN/Arms Index = $\frac{\text{Number of advancing issues} \div \text{Number of declining issues}}{\text{Volume of advancing issues} \div \text{Volume of Declining issues}}$

$$= \frac{950}{98,986,987} \div \frac{545}{57,874,589} = 1.0191.$$

36. B is correct. An increase in new equity issuance is (IPO) suggest that the upward trend may be about to turn down. This happens due to higher supply of shares in the market as against the demand.
37. A is correct. The moving averages method is simple to construct. When a short-term moving average crosses a longer-term moving average from below, this movement is considered bullish and is called a golden cross.
38. A is correct. He is using Bollinger bands as they consist of a band within which the price of the security fluctuates.
39. C is correct. Samuel is least likely to find the momentum oscillator useful. He should use the Arms Index.
40. B is correct. The momentum oscillator and stochastic oscillator oscillate between 0 and 100. The moving average convergence/divergence (MACD) does not have a lower or upper limit.
41. C is correct. A put-call ratio is a sentiment indicator which is calculated by dividing the volume of put options traded by the volume of call options traded.
42. A is correct. Since the short term moving average moves above a long term moving average, the movement is a golden cross. An RSI greater than 70 is considered bearish. A TRIN greater than 1 is also considered bearish.
43. B is correct. Kondratieff wave is a cycle of 54 years. This is the longest and a widely recognized cycle.
44. B is correct. Wave 2 is a correction, retracing much of the gain from Wave 1, but not all of it. The lost proportion is usually a percentage equal to a Fibonacci ratio, and it consists of three smaller waves.
45. A is correct. According to Elliot wave theory, the longest to shortest wave/cycles are: minute, minuette, and subminuette.
46. C is correct. Fibonacci Ratio is often used to set target prices. Put-call ratio is an indicator of overbought or oversold markets and helps to guide about the future directions of the markets. Short interest ratio is also used to predict the movement of market in future but it cannot be used to set the target price.
47. C is correct. Secondary wave is not a cycle mentioned by Elliott.
48. A is correct. The Elliott Wave Theory is based on the Fibonacci sequence as the market waves follow patterns which are ratios of the numbers in this sequence.

49. B is correct. Higher bond price means lower interest rate, which means cheaper financing and better results for companies and hence it results in increasing equity prices. Bond prices move inversely to the interest rates. Interest rates move in proportion to the inflation and the commodity prices. Hence, higher bond price means low interest rates, which in turn, means decreasing commodity prices.
50. A is correct. Relative strength analysis is the most commonly used tool to identify intermarket relationships. Relative strength index and momentum oscillators are tools used to predict the movement of market in future and not to analyze the relationship between different classes of assets.
51. C is correct. Inter-market analysis is not used for pricing futures and options.
52. B is correct. Relative strength analysis is used to compare securities or asset classes.