CHAPTER 31
FAIR VALUE MEASUREMENT (IND AS 113)

QUESTIONS FROM ICAI STUDY MATERIAL

Q1: A Ltd. has invested in certain bonds. The fair value of these bonds in different markets to which A Ltd. has an access is as follows:

Principal market	500
Highest and best use	600
Net present value of expected cash flows	550
Asset based valuation approach	450

What will be the fair value of bond as per Ind AS 113?

Ans: As per para 24 of Ind AS 113, fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction in the principal (or most advantageous) market at the measurement date under current market conditions (i.e. an exit price) regardless of whether that price is directly observable or estimated using another valuation technique.

Further, para 72 of the standard inter alia states that the fair value hierarchy gives the highest priority to quoted prices (unadjusted) in active markets for identical assets or liabilities (Level 1 inputs) and the lowest priority to unobservable inputs (Level 3 inputs).

According to the above, the value of bond shall be 500 based on the principal market.

Q2: Investment 1 is a contractual right to receive ₹ 800 in 1 year. There is an established market for comparable assets, and information about those assets, including price information, is available. Of those comparable assets:

a) Investment 2 is a contractual right to receive ₹ 1,200 in 1 year and has a market price of ₹ 1,083.

b) Investment 3 is a contractual right to receive ₹ 700 in 2 years and has a market price of ₹ 566.

All three assets are comparable with respect to risk (that is, dispersion of possible payoffs and credit).

You are required to measure the fair value of Asset 1 basis above information.

Ans: On the basis of the timing of the contractual payments to be received for Investment 1 relative to the timing for Investment 2 and Investment 3 (that is, one year for Investment 2 versus two years for Investment 3), Investment 2 is deemed more comparable to Investment 1. Using the contractual payment to be received for Investment 1 (₹ 800) and the 1-year market rate derived from Investment 2, the fair value of Investment 1 is calculated as under:

Investment 2 Fair Value ₹ 1,083

Contractual Cash flows in 1 year ₹ 1,200

IRR =₹ 1,083 x (1 + r) = ₹ 1,200

= (1 + r) = (₹ 1,200 / ₹ 1,083) = 1.108

r = 1.108 – 1 = 0.108 or 10.8%

Value of Investment 1= ₹ 800 / 1.108 = ₹ 722

Alternatively, in the absence of available market information for Investment 2, the one-year market rate could be derived from Investment 3 using the build-up approach. In that case, the 2-year market rate indicated by Investment 3 would be adjusted to a 1-year market rate using the term structure of the risk-free yield curve. Additional information and analysis might be required to determine whether the risk premiums for one-year and two-year assets are the same. If it is determined that the risk premiums for one-year and two-year assets are not the same, the two-year market rate of return would be further adjusted for that effect.

Q3: An asset is sold in 2 different active markets (a market in which transaction for the asset or liability takes place with sufficient frequency and volume to provide pricing information on an ongoing basis) at different prices.

An entity enters into transactions in both markets and can access the price in those markets for the asset at the measurement date.

In Market A:

The price that would be received is 26, transaction costs in that market are 3 and the costs to transport the asset to that market are 2 (i.e., the net amount that would be received is 21).

In Market B:

The price that would be received is 25, transaction costs in that market are 1 and the costs to transport the asset to that market are 2 (i.e., the net amount that would be received in Market B is 22).

You are required to calculate:

(i) The fair value of the asset, if market A is the principal market, and

(ii) The fair value of the asset, if none of the markets is principal market. **[Exam Nov 2018 (5)]**

Ans: If Market A is the principal market for the asset (i.e., the market with the greatest volume and level of activity for the asset), the fair value of the asset would be measured using the price that would be received in that market, after taking into account transport costs (24).

If neither market is the principal market for the asset, the fair value of the asset would be measured using the price in the most advantageous market. The most advantageous market is the market that maximises the amount that would be received to sell the asset, after taking into account transaction costs and transport costs (i.e., the net amount that would be received in the respective markets).

Because the entity would maximise the net amount that would be received for the asset in Market B (22), the fair value of the asset would be measured using the price in that market (25), less transport costs (2), resulting in a fair value measurement of 23.

Q4: Company J acquires land in a business combination. The land is currently developed for industrial use as a factory site. Although the land's current use is presumed to be its highest and best use unless market or other factors suggest a different use, Company J considers the fact that nearby sites have recently been developed for residential use as high-rise apartment buildings.

On the basis of that development and recent zoning and other changes to facilitate that development, Company J determines that the land currently used as a factory site could be developed as a residential site (e.g., for high-rise apartment buildings) and that market participants would take into account the potential to develop the site for residential use when pricing the land.

Ans: The highest and best use of the land is determined by comparing the following:

- The value of the land as currently developed for industrial use (i.e., an assumption that the land would be used in combination with other assets, such as the factory, or with other assets and liabilities); and
- The value of the land as a vacant site for residential use, taking into account the costs of demolishing the factory and other costs necessary to convert the land to a vacant site. The value under this use would take into account risks and uncertainties about whether the entity would be able to convert the asset to the alternative use (i.e., an assumption that the land would be used by market participants on a stand-alone basis).

The highest and best use of the land would be determined on the basis of the higher of these values. In situations involving real estate appraisal, the determination of highest and best use might take into account factors relating to the factory operations (e.g., the factory's operating cash flows) and its assets and liabilities (e.g., the factory's working capital).

Q5: ABC Ltd. acquired 5% equity shares of XYZ Ltd. for ₹ 10 crore in the year 2011-12. The company is in process of preparing the financial statements for the year 2012-13 and is assessing the fair value at subsequent measurement of the investment made in XYZ Ltd. Based on the observable input, the ABC Ltd. identified a similar nature of transaction in which PQR Ltd. acquired 20% equity shares in XYZ Ltd. for ₹ 60 crore. The price of such transaction was determined on the basis of Comparable Companies Method (CCM)- Enterprise Value (EV) / EBITDA which was 8. For the current year, the EBITDA of XYZ Ltd. is ₹ 40 crore. At the time of acquisition, the valuation was determined after considering 5% of liquidity discount and 5% of non-controlling stake discount. What will be the fair value of ABC Ltd.'s investment in XYZ Ltd. as on the balance sheet date? **[MTP May 2025; SEP 2025; JAN 2026]**

Ans: Determination of Enterprise Value of XYZ Ltd.

Particulars	**₹ in crore**

EBITDA as on the measurement date	40
EV/EBITDA multiple as on the date of valuation	8
Enterprise value of XYZ Ltd.	320

Determination of subsequent measurement of XYZ Ltd.

Particulars	**₹ in crore**
Enterprise Value of XYZ Ltd.	320
ABC Ltd.'s share based on percentage of holding (5% of 320)	16
Less: Liquidity discount & Non-controlling stake discount (5%+5%=10%)	(1.6)
Fair value of ABC Ltd.'s investment in XYZ Ltd.	14.4

Q6: UK Ltd. is in the process of acquisition of shares of PT Ltd. as part of business reorganization plan. The projected free cash flow of PT Ltd. for the next 5 years are as follows:

(₹ in crore)

Particulars	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**
Cash flows	187.1	187.6	121.8	269	278.8
Terminal Value					3,965

The weightage average cost of capital of PT Ltd. is 11%. The total debt as on measurement date is ₹ 1,465 crore and the surplus cash & cash equivalent is ₹ 106.14 crore.

The total numbers of shares of PT Ltd. as on the measurement date is 8,52,84,223 shares. Determine value per share of PT Ltd. as per Income Approach.

[Exam Nov 22 (5 Marks); May 2025 (4 Marks)]

Ans:

Determination of equity value of PT Ltd.				**(in crore)**	
Particulars	Year 1	Year 2	Year 3	Year 4	Year 5
Cash flows	187.1	187.6	121.8	269	278.8
Terminal Value					3,965
Discount rate	0.9009	0.8116	0.7312	0.6587	0.5935
Free Cash Flow					
available to the firm	168.56	152.26	89.06	177.19	2,518.69
Total of all years					3,105.76
Less: Debt					(1,465)
Add: Cash & Cash equivalent					106.14
Equity Value of PT Ltd.					1,746.90
No. of Shares					85,284,223
Per Share Value					204.83

Q7: You are a senior consultant of your firm and are in process of determining the valuation of KK Ltd. You have determined the valuation of the company by two approaches i.e. Market Approach and Income approach and selected the highest as the final value. However, based upon the discussion with your partner you have been requested to assign equal weights to both the approaches and determine a fair value of shares of KK Ltd. The details of the KK Ltd. are as follows:

Particulars	₹ in crore
Valuation as per Market Approach	5268.2
Valuation as per Income Approach	3235.2
Debt obligation as on Measurement date	1465.9
Surplus cash & cash equivalent	106.14
Fair value of surplus assets and Liabilities	312.4
Number of shares of KK Ltd.	8,52,84,223 shares

Determine the Equity value of KK Ltd. as on the measurement date on the basis of above details

[Exam Dec 21 (4 Marks); MTP May 2024]

Ans: Equity Valuation of KK Ltd

Particulars	Weights	(₹ in crore)
As per Market Approach	50	5268.2
As per Income Approach	50	3235.2
Enterprise Valuation based on weights (5268.2 x 50%) + (3235.2 x 50%)		4,251.7
Less: Debt obligation as on measurement date		(1465.9)
Add: Surplus cash & cash equivalent		106.14
Add: Fair value of surplus assets and liabilities		312.40
Enterprise value of KK Ltd.		3204.33
No. of shares		85,284,223
Value per share		375.72

Q8: Comment on the following by quoting references from appropriate Ind AS.

1. DS Limited holds some vacant land for which the use is not yet determined. the land is situated in a prominent area of the city where lot of commercial complexes are coming up and there is no legal restriction to convert the land into a commercial land.

   The company is not interested in developing the land to a commercial complex as it is not its business objective. Currently the land has been let out as a parking lot for the commercial complexes around.

   The Company has classified the above property as investment property. It has approached you, an expert in valuation, to obtain fair value of the land for the purpose of disclosure under Ind AS.

On what basis will the land be fair valued under Ind AS?

2. DS Limited holds equity shares of a private company. In order to determine the fair value' of the shares, the company used discounted cash flow method as there were no similar shares available in the market.

Under which level of fair value hierarchy will the above inputs be classified?

What will be your answer if the quoted price of similar companies were available and can be used for fair valuation of the shares?

Ans:

(i) (As per Ind AS 113, a fair value measurement of a non-financial asset takes into account a market participant's ability to generate economic benefits by using the asset in its highest and best use or by selling it to another market participant that would use the asset in its highest and best use.

The highest and best use of a non-financial asset takes into account the use of the asset that is physically possible, legally permissible and financially feasible, as follows:

(a) A use that is physically possible takes into account the physical characteristics of the asset that market participants would take into account when pricing the asset (eg the location or size of a property).

(b) A use that is legally permissible takes into account any legal restrictions on the use of the asset that market participants would take into account when pricing the asset (eg the zoning regulations applicable to a property).

(c) A use that is financially feasible takes into account whether a use of the asset that is physically possible and legally permissible generates adequate income or cash flows (taking into account the costs of converting the asset to that use) to produce an investment return that market participants would require from an investment in that asset put to that use.

Highest and best use is determined from the perspective of market participants, even if the entity intends a different use. However, an entity's current use of a non-financial asset is presumed to be its highest and best use unless market or other factors suggest that a different use by market participants would maximise the value of the asset.

To protect its competitive position, or for other reasons, an entity may intend not to use an acquired non-financial asset actively or it may intend not to use the asset according to its highest and best use. Nevertheless, the entity shall measure the fair value of a non-financial asset assuming its highest and best use by market participants.

In the given case, the highest best possible use of the land is to develop a commercial complex. Although developing a business complex is against the

business objective of the entity, it does not affect the basis of fair valuation as Ind AS 113 does not consider an entity specific restriction for measuring the fair value.

Also, its current use as a parking lot is not the highest best use as the land has the potential of being used for building a commercial complex.

Therefore, the fair value of the land is the price that would be received when sold to a market participant who is interested in developing a commercial complex.

(ii) As per Ind AS 113, unobservable inputs shall be used to measure fair value to the extent that relevant observable inputs are not available, thereby allowing for situations in which there is little, if any, market activity for the asset or liability at the measurement date. The unobservable inputs shall reflect the assumptions that market participants would use when pricing the asset or liability, including assumptions about risk.

In the given case, DS Limited adopted discounted cash flow method, commonly used technique to value shares, to fair value the shares of the private company as there were no similar shares traded in the market. Hence, it falls under Level 3 of fair value hierarchy.

Level 2 inputs include the following:

(a) quoted prices for similar assets or liabilities in active markets.

(b) quoted prices for identical or similar assets or liabilities in markets that are not active.

(c) inputs other than quoted prices that are observable for the asset or liability.

If an entity can access quoted price in active markets for identical assets or liabilities of similar companies which can be used for fair valuation of the shares without any adjustment, at the measurement date, then it will be considered as observable input and would be considered as Level 2 inputs.

Q9: On 1st January, 20X1, A Ltd assumes a decommissioning liability in a business combination. The reporting entity is legally required to dismantle and remove an offshore oil platform at the end of its useful life, which is estimated to be 10 years. The following information is relevant:

If A Ltd was contractually allowed to transfer its decommissioning liability to a market participant, it concludes that a market participant would use all of the following inputs, probability weighted as appropriate, when estimating the price it would expect to receive:

a) Labour costs

Labour costs are developed based on current marketplace wages, adjusted for expectations of future wage increases, required to hire contractors to dismantle and remove offshore oil platforms. A Ltd. assigns probability to a range of cash flow estimates as follows:

Cash Flow Estimates:	100 Cr	125 Cr	175 Cr
Probability:	25%	50%	25%

b) Allocation of overhead costs:

Assigned at 80% of labour cost

c) The compensation that a market participant would require for undertaking the activity and for assuming the risk associated with the obligation to dismantle and remove the asset. Such compensation includes both of the following:

1. Profit on labour and overhead costs:

   A profit mark-up of 20% is consistent with the rate that a market participant would require as compensation for undertaking the activity

2. The risk that the actual cash outflows might differ from those expected, excluding inflation:

   A Ltd. estimates the amount of that premium to be 5% of the expected cash flows. The expected cash flows are 'real cash flows' / 'cash flows in terms of monetary value today'.

d) Effect of inflation on estimated costs and profits

A Ltd. assumes a rate of inflation of 4 percent over the 10 -year period based on available market data.

e) Time value of money, represented by the risk-free rate: 5%

f) Non-performance risk relating to the risk that Entity A will not fulfill the obligation, including A Ltd.'s own credit risk: 3.5%.

A Ltd, concludes that its assumptions would be used by market participants. In addition, A Ltd. does not adjust its fair value measurement for the existence of a restriction preventing it from transferring the liability.

You are required to calculate the fair value of the asset retirement obligation. **[RTP Nov 2021]**

Ans:

Particulars	Workings	Amount (In Cr)
Expected Labour Cost (Refer W.N.)		131.25
Allocated Overheads	(80% x 131.25 Cr)	105.00
Profit markup on Cost	(131.25 + 105) x 20%	47.25
Total Expected Cash Flows before inflation		**283.50**
Inflation factor for next 10 years (4%)	(1.04)10 =1.4802	
Expected cash flows adjusted for inflation	283.50 x 1.4802	419.65

Risk adjustment - uncertainty relating to cash flows	(5% x 419.65)	20.98
Total Expected Cash Flows	(419.65+20.98)	440.63
Discount rate to be considered = risk-free rate + entity's non-performance risk	5% + 3.5%	8.5%
Expected present value at 8.5% for 10 years	**(440.63 / (1.08510))**	**194.88**

Working Note:
Expected labour cost:

Cash Flows Estimates	Probability	Expected Cash Flows
100 Cr	25%	25.00 Cr
125 Cr	50%	62.50 Cr
175 Cr	25%	43.75 Cr
Total		131.25 Cr

Q10:

(i) Entity A owns 250 ordinary shares in company XYZ, an unquoted company. Company XYZ has a total share capital of 5,000 shares with nominal value of ₹ 10. Entity XYZ's after-tax maintainable profits are estimated at ₹ 70,000 per year. An appropriate price/earnings ratio determined from published industry data is 15 (before lack of marketability adjustment). Entity A's management estimates that the discount for the lack of marketability of company XYZ's shares and restrictions on their transfer is 20%. Entity A values its holding in company XYZ's shares based on earnings. Determine the fair value of Entity A's investment in XYZ's shares.

(ii) Based on the facts given in the aforementioned part (i), assume that, Entity A estimates the fair value of the shares it owns in company XYZ using a net asset valuation technique. The fair value of company XYZ's net assets including those recognised in its balance sheet and those that are not recognised is ₹ 8,50,000. Determine the fair value of Entity A's investment in XYZ's shares.

[RTP Nov 2021; MTP May 2023; MTP Nov 2023; Nov 2024]

Ans:

(i) An earnings-based valuation of Entity A's holding of shares in company XYZ could be calculated as follows:

Particulars	Unit
Entity XYZ's after-tax maintainable profits (A)	₹70,000
Price/Earnings ratio (B)	15
Adjusted discount factor (C) (1- 0.20)	0.80

Value of Company XYZ (A) x (B) x (C)	₹ 8,40,000

Value of a share of XYZ = ₹ 8,40,000 ÷ 5,000 shares = ₹ 168

The fair value of Entity A's investment in XYZ's shares is estimated at ₹ 42,000 (that is, 250 shares × ₹ 168 per share).

(ii) Share price = ₹ 8,50,000 ÷ 5,000 shares = ₹ 170 per share.

The fair value of Entity A's investment in XYZ shares is estimated to be ₹ 42,500 (250 shares × ₹ 170 per share).

QUESTIONS FROM RTP/MTP/EXAMS

Q11: An asset is sold in two different active markets at different prices. Manor Ltd. enters into transactions in both markets and can access the price in those markets for the asset at the measurement date.

Chp Nov 26

In Mumbai market, the price that would be received is ₹ 290, transaction costs in that market are ₹ 40 and the costs to transport the asset to that market are ₹ 30. Thus, the net amount that would be received is ₹ 220.

In Kolkata market the price that would be received is ₹ 280, transaction costs in that market are ₹ 20 and the costs to transport the asset to that market are ₹ 30. Thus, the net amount that would be received in Kolkata market is ₹ 230.

a) What should be the fair value of the asset if Mumbai Market is the principal market? What should be fair value if none of the markets is principle market?

b) It the net realization after expenses is more in export market, say ₹ 280, but Government allows only 15% of the production to be exported out of India. Discuss what would be fair value in such case. **[Exam Nov 2019]**

Ans: 1 **(a) If Mumbai Market is the principal market**

If Mumbai Market is the principal market for the asset (i.e., the market with the greatest volume and level of activity for the asset), the fair value of the asset would be measured using the price that would be received in that market, after taking into account transportation costs. Fair value will be

	₹
Price receivable	290
Less: Transportation cost	(30)
Fair value of the asset	260

(b) If neither of the market is the principal market

If neither of the market is the principal market for the asset, the fair value of the asset would be measured using the price in the most advantageous market. The most advantageous market is the market that maximises the amount that would be received

to sell the asset, after taking into account transaction costs and transportation costs (i.e., the net amount that would be received in the respective markets).

	₹	₹
	Mumbai Market	Kolkata Market
Fair value of the asset as per the question	220	230

Since the entity would maximise the net amount that would be received for the asset in Kolkata Market i.e. ₹ 230, the fair value of the asset would be measured using the price in Kolkata Market.

Fair value in such a case would be

	₹
Price receivable	280
Less: Transportation cost	(30)
Fair value of the asset	250

2) Export prices are more than the prices in the principal market and it would give highest return comparing to the domestic market. Therefore, the export market would be considered as most advantageous market. But since the Government has capped the export, maximum up to 15% of total output, maximum sale activities are being done at domestic market only i.e. 85%. Since the highest level of activities with highest volume is being done at domestic market, principal market for asset would be domestic market. Therefore, the prices received in domestic market would be used for fair valuation of assets.

Q12: Shravan Ltd. owns 6,800 ordinary shares in PQR Ltd., an unquoted company. PQR Ltd. has a total share capital of 2,00,000 shares with nominal value of ₹ 10. PQR Ltd.'s after tax maintainable profits are estimated at ₹ 28,00,000 per year. An appropriate price/earnings ratio determined from published industry data is 12 (before lack of marketability adjustment). Shravan Ltd.'s management estimates that the discount for the lack of marketability of PQR Ltd.'s shares and restrictions on their transfer is 18%.

Shravan Ltd. values its holding in PQR Ltd.'s shares based on earnings.

Determine the fair value of Shravan Ltd.'s investment in PQR Ltd.'s shares.

[Exam May 22 (5 Marks)]

Ans: Calculation of an earnings-based valuation of Shravan Ltd.'s holding of shares in PQR Ltd.:

Particulars		**Unit**
PQR Ltd.'s after-tax maintainable profits	(A)	₹ 28,00,000
Price / Earnings ratio	(B)	12
Adjusted discount factor (1- 0.18)	(C)	0.82
Value of PQR Ltd.	(A) x (B) x (C)	₹ 2,75,52,000

Value of a share of PQR Ltd. = ₹ 2,75,52,000 / 2,00,000 shares = ₹ 137.76

The fair value of Shravan Ltd.'s investment in PQR Ltd.'s shares is estimated at ₹ 9,36,768 (that is, 6,800 shares × ₹ 137.76 per share).

Alternative way of presentation:

Particulars		
PQR Ltd.'s after-tax maintainable profits in ₹	(A)	28,00,000
PQR Ltd.'s number of outstanding shares	(B)	2,00,000
PQR Ltd.'s EPS in ₹	(C = (A/B))	14.00
Industry PE ratio (given)	(D)	12
Market price of PQR Ltd. per share in ₹	(E = (C x D))	168.00
Discount for lack of marketability @ 18% in ₹	(F = E x 18%)	30.24
Adjusted price per share of PQR Ltd. in ₹	(G = (E-F))	137.76
Shravan Ltd.'s holding	(H)	6,800 shares
Fair value of Shravan's investment in PQR Ltd.	(G x H)	9,36,768.00