

Insolvency and Bankruptcy Board of India

31st December, 2017

Subject: Valuation Examination for Asset Class- Plant and Machinery

In pursuance of the rule 5 (3) of the Companies (Registered Valuers and Valuation) Rules, 2017, the Insolvency and Bankruptcy Board of India, being the Authority, hereby publishes the syllabus, format and frequency of the 'Valuation Examination' for the asset class: **Plant and Machinery**.

I. Syllabus

Sl. No.	Coverage	Weight (%)
a.	<p>Principles of Economics</p> <ul style="list-style-type: none">• Micro-Economics<ul style="list-style-type: none">- Consumption: Indifference Curve, Consumer's Surplus, Elasticity.- Price Mechanism: Determinants of Price Mechanism, Individual and Market Demand Schedules, Law of Demand & its Conditions, Exceptions and Limitations of Law of Demand, Individual and Market Supply Schedules, Conditions and Limitations, Highest, Lowest and Equilibrium Price, Importance of Time Element.- Pricing of Products under different market conditions: Perfect and Imperfect Competition, Monopoly.- Factors of Production and their pricing – Land, Labour, Capital, Entrepreneur and other factors- Theory of Rent, Theory of Wages- Capital and Interest - Types of Capital, Gross Interest, Net Interest- Organisation and Profit - Functions of Entrepreneur, Meaning of Profit and Theories of Profit.• Macro-Economics<ul style="list-style-type: none">- Functions & Role of Money- Inflation: Types of Inflation, Causes, Effects, Inflationary Gap, Control of Inflation, Monetary, Fiscal and Direct Measures- Deflation: Causes, Effects, Deflationary Gap, Measures to Control Deflation, Deficit Financing.- Savings and Investment: Savings and Types of Savings, Determinants of Savings, Investment, Types of Investment, Determinants of Investment, Relationship between Savings and Investment.- Components of Economy: Primary Sector, Secondary Sector, Tertiary Sector, Informal Sector in Urban Economy, Parasitic Components in Urban Economy.- Concepts of GDP and GNP, Capital Formation- Parallel Economy: Definition of Parallel Economy, Causes and Effects of Parallel Economy on Use of	10

	Land and its Valuation - Its Impact on Real Estate Market - Construction Industry and Parallel Economy.	
b.	Book Keeping and Accountancy <ul style="list-style-type: none"> - The meaning and objects of Book Keeping, Double Entry Book Keeping. - Books of Prime Entry and Subsidiary Books: Cash Book, Bank Book, Journal, Ledger, Purchase and Sale Books, Debit and Credit Notes Register, Writing of Books, Posting and Closing of Accounts. - Trading Account, Profit and Loss Account, Income and Expenditure Account, - Preparation of Balance Sheet for Individuals and Companies and Disclosure Requirements. - Cost, Costing and Elements of Cost, Fixed Expenses, Variable Expenses, Break-Even Point. 	5
c.	Law-General <ul style="list-style-type: none"> - Indian Legal System: Salient Features of the Indian Constitution, Fundamental Rights, Directive Principles of the State Policy. - Government: Executive, Legislature and Judiciary - Laws of Contract: Formation of a Contract, Parties, Void, Voidable and Unenforceable Contract, Contingent Contract, Misrepresentation and Fraud and Effect thereof, Termination of Contract, Remedies for Breach, Performance of Contract, Indemnity and Guarantee, Law of Agency. - Tort: General Principles of Tort, Tort affecting Valuation. - Law of Arbitration and Conciliation: Salient Features - Auction: Authority of Auctioneer, Duties of Vendor, Purchaser and Public, Mis-description and Misrepresentation, Advertisements, Particulars and Catalogues, Statements on the Rostrum, Conduct of Sale, Reservation of Price and Right to Bid, Bidding Agreements. Memorandum of the Sale. The Deposit, Rights of Auctioneer against Vendor and Purchaser - Laws of Evidence: Burden of Proof, Presumptions, Conclusive Proof. - Salient Features of the Insolvency and Bankruptcy Code, 2016 concerning Valuation. - Salient Features of the Companies (Registered Valuers And Valuation) Rules, 2017 - Salient Features of the Securitization and Reconstruction of Financial Assets and Enforcement of Security Interest Act, 2002 (SARFAESI Act) concerning Valuation - Section 5(n) of the Banking Regulation Act, 1949 on “Secured Loan or Advance” - The Companies Act 2013: Sections 192(2), 230 (1,2,3), 231, 232, 247(1), 281(1) 	6

d.	<p>Introduction to Statistics</p> <ul style="list-style-type: none"> - Data Classifications and Processing, Graphical Representation of Data, Frequency Distributions. - Measures of Central Tendency, Dispersion and Skewness. - Elementary Theory of Probability and Probability Distributions, Sampling and Sampling Distributions, Estimation - Simple Test of Significance, Regression and Correlation, Multiple Correlation Coefficient, - Time Series - Index Numbers 	4
e.	<p>Environmental Issues in Valuation</p> <ul style="list-style-type: none"> - Environment and Valuation - Differences between the 'Market Price and the Negative Value Consequent on Environmental Impact. - Environmental Issues of Air Pollution, Water Pollution, Environmental Factors and their effects, Measures to Restore the Damage, Cost to Cure. - Outlines of Environmental Legislations: The Forest Act, 1927, Laws related to Industrial Health & Safety. - The Water (Prevention and Control of Pollution) Act, 1974, The Air (Prevention and Control of Pollution) Act, 1981, The Environment (Protection) Act, 1986 	4
f.	<p>Professional Ethics and Standards</p> <ul style="list-style-type: none"> - Model Code of Conduct as notified by MCA under the Companies (Registered valuers and valuation) Rules 2017 - Other Engagement Considerations 	4
g.	<p>Valuation of Plant and Machinery</p> <ul style="list-style-type: none"> - Role, Functions and Responsibilities of a Plant and Machinery Valuer. - Cost, Price, Value and Valuation. - Types of Market, Demand and Supply Curve, Bell Curve for overall sales performance (Probability Distribution) - Annuities, Capitalization, Rate of Capitalization, Years Purchase, Sinking Fund, Redemption of Capital, Reversionary Value - Construction and use of Valuation Tables • Definitions of the various terms: <ul style="list-style-type: none"> - Plant and Machinery, Furniture, Fixtures and Fittings – the judicial interpretation of these terms - Market value, Highest and Best Use Value • Meaning of the terms: <ul style="list-style-type: none"> - Basis of Valuation, Value in Use, Value in Exchange, Value to the Buyer, Value to the Seller, Value to the Occupier, Value in Existing Use In-Situ, Value in Existing Use in Ex-Situ, Value in Alternative Use In-Situ, Value in Alternative Use in Ex-Situ, Liquidation 	6

	<p>Value In-Situ/Ex--Situ, Orderly Liquidation Value, Forced Sale Value.</p> <ul style="list-style-type: none"> - Investment Property, Marketable Non-Investment Property, Non-Marketable -Non-Investment Property with their characteristics and approaches to Value. - Factors having direct bearing on Value (Valuation Maxims) like Physical, Legal, Social, Economic, Utility, Marketability, Transferability, Scarcity, Present Worth of Future Benefits and Intangible Rights 	
	<ul style="list-style-type: none"> • Identification of Plant and Machinery/Physical Verification of Plant and Machinery <ul style="list-style-type: none"> - Inventory (Listing of Machinery) and data to be collected while taking inventory - Importance of Technical Specifications of Plant and Machinery in Valuation Exercise - Assessment of Condition of PME based on Visual Inspection - Comparing Inventory with Plant and Machinery Records maintained by the Company - Ascertaining Discrepancy - Identification of Productive, Non-Productive, Surplus and Off-Balance Sheet Assets - Age, Effective Age, Total Economic Life, Economic Balance Life, Physical Life and their importance in Valuation. - Factors affecting Life both in terms of years or hours used based on Type of Assets, Sources of Economic Useful Life, Study of Maintenance Schedules of Plant. - Difference Between Historical Cost, Acquisition Cost, Book Cost, Written Down Value and Net Book Value. - The Items of Building to be treated as Plant and Machinery-like Chimneys to the Boiler, Brick, Concrete or RCC Foundation for Plant and Machinery, Water and Sewerage Installations, Effluent Treatment Plant etc. 	5
	<ul style="list-style-type: none"> • Depreciation under Income Tax Act, 1961 as well as Companies Act 2013. <ul style="list-style-type: none"> - Useful Lives to compute depreciation as per Schedule II of Companies Act,2013 - Factors to be considered for Componentization of Assets. • Installed Capacity of the Plant, Actual Production, Raw Material Availability, Level of Technology used such as Current or Obsolete, Issues if any regards to these. • Part, Fraction and Whole Valuation • Relationship of Earnings and Assets • Difference Between Business Specific Economic Viability and Economic Obsolescence. 	4

	<ul style="list-style-type: none"> • Efficiency of Plant Layout, Imbalances in different production sections and their relevance in valuation 	
Three Approaches to Value – Cost, Market and Income		
	<ul style="list-style-type: none"> • Cost approach <ul style="list-style-type: none"> - Reproduction Cost New, Replacement Cost New, Depreciated Reproduction Cost/Depreciated Replacement Cost (DRC), Difference and similarity in DRC and Market Value - Difference between Reproduction Cost New and Replacement Cost New - Methods of Computation of Reproduction Cost New - Market Inquiry of Current Cost of Brand New Machine with Identical Specifications from same manufacturer i.e. Replica - Indexation and its limitations - Cost to Capacity Method and its limitation - Methods of Computation Of Replacement Cost New when Identical Machine/Plant is not available i.e. Machine/Plant of like Kind and Type-Factors to be taken into consideration - Direct and Indirect Costs for Estimation of Reproduction New /Replacement Cost New - Meaning of the term Depreciation for Wear and Tear, Factors influencing Depreciation-its measurements and application by Valuers of Plant and Machinery. Concept of Salvage Value and Scrap Value along with the basis of the same. - Methods of Depreciation – Observed Deterioration, Straight Line, Diminishing Balance (WDV), - Difference between Accounting and Technical Depreciation - Factors to be taken into consideration for selection of Depreciation Method - Obsolescence-Technological, Functional and Economic - DRC subject to Potential Profitability - Limitations of Cost Approach. 	8
	<ul style="list-style-type: none"> • Market Approach-Sales comparison method <ul style="list-style-type: none"> - Data Collection - Elements of Comparability and application of appropriate Weightages to Identified Comparable to Estimate Value of Subject Plant and Machinery Asset being valued. Instances when Sales Comparison Method is not feasible and limitations of Sales Comparison Method. 	2
	<ul style="list-style-type: none"> • Income Approach <ul style="list-style-type: none"> - The concept of Income Approach - Gross Income-Outgoings, Net Income and Year's Purchase - Actual Income Vs Potential Income - Terminal Income 	3

	<ul style="list-style-type: none"> - Remunerative and Accumulative Rates of Interest and various methods of determining the same - Capitalization of Earnings Method - Discounted Future Earnings Method (DCF Technique) - Pitfalls of DCF Technique 	
	<ul style="list-style-type: none"> • Process of Valuation <ul style="list-style-type: none"> - Check List for Valuation of Plant and Machinery, documents to be studied prior to Plant Visit/Inspection, ABC analysis - The items to be treated as Plant and Machinery - The items to be treated as Land and Buildings - Physical Verification (Survey and Inspection) - Data Collection and Valuation Analysis under Replacement Cost New Method (Cost Approach) 	3
	<ul style="list-style-type: none"> • Broad categories of machines to be encountered by plant and machinery valuers in actual practice <ul style="list-style-type: none"> - Valuation of a machine for which current cost of identical brand-new machine is available - Valuation of a machine for which current cost of identical brand-new machine is not available - Valuation of a machine which is no longer manufactured • The reasons for the differences in the prices of the machines with same technical specifications and features by different manufacturers • The factors to be considered while adopting Cost Approach. • Data Collection and Valuation Analysis under -Cost, Market and Income Approaches 	4
	<ul style="list-style-type: none"> • Leasing of plant and machinery <ul style="list-style-type: none"> - Definition of Lease - Leasing, Hiring and Renting - Obligations of Supplier of Asset, User of Asset, Hire Purchase Company/Lessor in cases of Loan, Supplier's Credit, Hire Purchase and Leasing - Leasing as an Instance of Bailment, Nature of the Bailment Agreement, Features of Bailment, Contracts Law on Bailment - Leasing Rules - Types of Leases and their characteristics - Steps in the structuring of a Lease Contract - Leasing from point of view of Lessor/Lessee - Limitations of Leasing - The structure of a Lease Agreement - Treatment of Leased Assets in Company Accounts – Accounting Practice for Leased Plant and Machinery as per Indian Accounting Standard - Assessment of Lease related risk - Risk and Return trade-off 	12

	<ul style="list-style-type: none"> • Valuation of leased plant and machinery • Valuation of machine tools, factory and utility equipment • Valuation of plant and machinery for following purposes: <ul style="list-style-type: none"> - Mergers and Acquisitions (including Purchase Price Allocation) - Financial Statements - Impairment - Auction - Insurance - Leasing - Disposal - Capital Raising - Corporatization and Privatization - Stamp Duty - Any other purpose not referred above • Impact of Indian accounting standards, International Valuation Standards and Standards to be published by Ministry of Corporate Affairs, Government of India on Valuation of Plant and Machinery 	
	<ul style="list-style-type: none"> • Case laws <ul style="list-style-type: none"> - Fixture - Holland Vs. Hodgson (1872) L.R.7C.P.328 AT 335 - Plant and Machinery in nature of Land and Buildings - Duncan's case - AIR 2000 SC 355 - Obsolescence – Westinghouse Electric Corporation US 1993 NCAApp.710.379S.E.2D 37(1989) - Just because a Plant and Machinery are fixed in the Earth for better functioning it does not automatically become an Immovable Property - Sirpur Paper Mills Pvt. Ltd Vs. The Collector of Central Excise 1998(1) SCC 400 - Plant and Machinery in nature of Land and Buildings - Official Liquidator Vs. Sri Krishna Deo and Ors. (AIR 1959 All 247) - Valuation of specialized Plant and Machinery by Cost Approach is subject to Potential Profitability - Symex Holdings Ltd. Vs. Commissioner of State Revenue, Victoria, Australia (2007 VSC 159) 	1
h.	<p>Law - Plant and Machinery</p> <ul style="list-style-type: none"> - Sale of Goods and Agreements to Sell, Seller's Obligations as to delivery Time, Title, Description, Fitness, Quality and Quantity; Exclusion of Obligations, Sales by Sample, Passing of Property in Goods; Transfer of Title by Non-owner, Remedies for Breach of Contract; Rights of Unpaid Seller against Goods. - Licensing of Industries and regulation of industrial activities under various laws; viz. Industrial Licensing Laws etc. - Salient features of various acts such as the Factory Act, 1948, the Electricity Act, 2003, Labour laws with 	3

	regards to regulatory measures for industrial undertakings.	
i.	<p>Principles of Insurance and Loss Assessment</p> <ul style="list-style-type: none"> - Principles and legal concepts in relation to Insurance of Plant & Machinery. The Contract of Insurance. Insurable Interests and Liability to Insure. Duties of the Insurer and the Insured. - The types of Fire Policies, Reinstatement Cost Policy and policies for other perils, Terms and Conditions, Perils, Beneficial And Restrictive Clauses. - Value at Risk, Sum Insured and Condition of Average, Over and Under Insurance, Inflation Provisions, other contents, Depreciation, Obsolescence and Betterment. - Preparation of Claim for Damages due to Insured Perils. - Obligations and Rights of Insurer and Insured. 	4
j.	<p>Industrial Processes</p> <ul style="list-style-type: none"> - Factory Planning and layout: Types of Plant Layout, Production Techniques, Automation, Mass Production, Batch and One-Off Production. - Principles of Industrial Processes: Material flow, process sequences, automation and process control. - Industrial Processes: The Normal Processes, Methods of Manufacture, Plant and Machinery utilised, Flow Diagrams and Inventory Compilation for the following specific industries: <ul style="list-style-type: none"> o Textiles, Dairy, Vegetable Oil, Iron, Steel & Non-Ferrous Metal Production, Chemical and Pharmaceutical, Plastic and Rubber, Paper and Paper Products, Printing, Binding and Publishing, Food and Drink - The nature and function of trade specific machinery in any of the above industries. 	5
k.	<p>Report writing</p> <ul style="list-style-type: none"> - Reports-Quality, Structure, Style. - Report writing for various purposes like Sale/Purchase, M & A, Insurance, Liquidation and any other purposes for which a valuer is normally called upon for advice in general practice. - Contents of the report: The Instructions (including basis of valuation) received from the clients showing scope of work, Date as on which valuation is required, Date of Valuation, Date of Report, Date of Inspection, Purpose of Valuation, Location of Assets, Valuation Definition considered, Approach/Method of Valuation, Procedure Adopted, Summary of Valuation, Assumptions and Limiting Conditions including Caveats, Schedule of Plant and Machinery with Make, Model, Description, Year, Condition, Values. 	1

1.	Case Study On valuation of plant and machinery mentioned under Part - g above. (This section will have a case study for application of valuation techniques. There will be a comprehension narrating the transaction based on which questions will be asked from the case.)	6
Total		100

Note: Wherever any Law, Act of Parliament or any Rule is referred in the syllabus, the same shall be taken as updated as on 31st December, 2017.

II. Format of Examination

The format of examination is as under:

- a. The examination is conducted online (computer-based in a proctored environment) with objective multiple-choice questions;
- b. The duration of the examination is 2 hours;
- c. A candidate is required to answer all questions;
- d. A wrong answer attracts a negative mark of 25% of the marks assigned for the question;
- e. A candidate needs to secure 60% of marks for passing;
- f. A successful candidate is awarded a certificate by the Authority;
- g. A candidate is issued a temporary mark sheet on submission of answer paper; and
- h. No workbook or study material is allowed or provided.
- i. A candidate may use a non-memory based calculator. No mobile phone is allowed.

III. Frequency of Examination

The frequency of Examination is as under:

- a. The examination is available from a number of locations in the country;
- b. The examination is available on every working day;
- c. A candidate needs to provide PAN and Aadhaar to enrol for the examination.

Further details about the examination will be provided subsequently.
