

## **PhD. Entrance Exam Jan 2018**

### **1. Structure of the Entrance Examination:**

- a. There would be two papers. Paper I would be of 50 marks, 2 hours duration, objective type, aimed at assessing the general intelligence and aptitude of the candidate and Paper II would also be of 50 marks, objective & subjective and aimed at assessing the subject knowledge, the communication skills, research thinking of the candidate.
- b. Paper I : It will have 50 questions of 1 mark each. Scope of this paper includes logical reasoning, numerical ability, Language skills etc. This paper is common for students of all faculties. Minimum passing is 50% for all candidates.
- c. Paper II: This paper is subject specific. It will be 40% objective multiple choice and 60% subjective. Aim is to check the subject knowledge, research thinking, communication skills etc.
- d. Passing percentage for this paper is 50% for all candidates.

## **Syllabus for Paper II**

### **Subject: Computer Engineering**

#### **Basic Computer Science**

1. C Programming
2. Data Structures
3. Algorithms
4. Operating Systems
5. DBMS
6. Theory of computation
7. Computer Networks
8. Computer Organization

#### **Other Domain Areas**

9. Research Methodology
10. Human-Computer-Interaction
11. IoT , Security , Renewable Energy

## **Subject: Management**

- **Marketing Management**

Marketing Orientation, Core Concepts in Marketing-Value, Satisfaction, Marketing Mix. Marketing Environment and Environment Scanning; Marketing Information Systems and Marketing Research; Understanding Consumer and Industrial Markets; Demand Measurement and Forecasting; Market Segmentation-Targeting and Positioning; Product Decisions, Product mix. Product Life Cycle; New Product Development; Branding and Packaging; Pricing Methods and Strategies. Promotion Decisions-Promotion mix; Advertising; Personal Selling; Channel Management; Vertical Marketing Systems; Evaluation and Control of Marketing Effort; Marketing of Services; Customer Relation Management Digital Marketing, e-commerce-B2B, B2C.

- **Financial Management**

Financial Management-Nature and Scope. Long Term and Short Term financing instruments. Time Value of Money and cost of Capital. Capital Structure. Capital Budgeting and Risk analysis. Working Capital Management. Dividend policy, determinants. Financial analysis, Ratio analysis and Cash flow statements.

- **Human Resource Management**

Concepts and Perspectives in HRM- Human Resource Planning- Objectives, Process and Techniques. Job analysis-Job Description- Job Evaluation. Recruitment and Selection and Exit Policy. Training and Development- Types, Training Need Analysis and methods. Performance Appraisal and Evaluation Types and Methods. Compensation Management and Wage Determination. Industrial Relations and Trade Unions. Dispute Resolution and Grievance Management. Labour Welfare

- **Principles and Practices of Management and Organizational Behavior**

Functions of Management, Concept and significance of organizational behavior, Theories of organizational behavior. Organizational Structure. Individual behavior - Personality- Perception-Values-Attitudes; Group Behavior-Group dynamics, Teamwork. Motivation-Types and Theories of Motivation. Leadership – Types and Theories. Learning – Types and Barriers. Conflict Management – Types. Change Management. Communication - Types and Barriers. Organizational Development – Theories, Intervention and Models.

- **Managerial Economics**

Demand Analysis, Production Function and Production Theory, Cost-Output Relations, Market Structures, Pricing Techniques, Demand – Cost – Profit – Forecasting, Macro-Economics, National Income Concepts, Economic policy – Export import Policy, Business Environment

- **Production Operations Management**

Role and Scope of Production Management; Facility Location; Layout Planning and Analysis; Production Planning and Control-Production Process Analysis; Demand Forecasting for Operations; Determinants of Product mix; Production Scheduling; Work measurement; Time and Motion Study; Statistical Quality Control. Role and Scope of

Operations Research; Linear Programming; Transportation Model; Inventory Control; PERT/CPM. Concept of Supply Chains, Responsive and Efficient Supply Chains, Retail Supply Chain, Industrial Supply Chain and Digital Supply Chain Management, Services Supply Chain.

- **Information Technology in Management**

Use of Computers in Managerial applications; Technology issues and Data processing in organizations; Information systems; MIS and Decision making; System analysis and design; Internet and Internet-based applications;

- **Business Ethics & Management Strategy**

Concept of Corporate Strategy; Components of Strategy Formulation; Ansoffs Growth Vector; BCG Model; Porter's Generic Strategies; Competitor Analysis; Strategic Dimensions and Group Mapping; Industry Analysis; Strategies in Industry Evolution, Fragmentation, Maturity, and decline. Competitive strategy and Corporate Strategy; Managing Cultural Diversity; Global Entry Strategies; Globalization of Financial System and Services. Ethical issues in Management; Corporate Social Responsibility; Corporate governance and ethics.

- **Entrepreneurship & Innovation**

Innovation and Entrepreneurship; Small business-Concepts Government policy for promotion of small and tiny enterprises; Process of Business Opportunity Identification Detailed business plan preparation; Managing small enterprises; Planning for growth; Sickness in Small Enterprises; Rehabilitation of Sick Enterprises; Entrepreneurship (Organizational Entrepreneurship) Start-up Ventures

## **Subject: Art Design and Architecture**

Visual Arts- Principles of Design- General characteristics of Visual Art- Space- Lines- Forms- Shapes- Texture- Basics of software used for graphic designing- Corporate Identity- Branding- Composition rules- Colour- Colour schemes- Multimedia- Plastic Art- Fine Art- Installation- Entrepreneurship- 2D & 3D- Painting- Sculpture- Print Making- Mural- Multimedia Art- Study of Aesthetics & Critical Study of Art

Research- Objectives/ Characteristic of research- Research Problem- Methods of research- Data Collection- Structure of research- Structure of Thesis

Communication- Principles of communication- Types of communication- Communication as a tool of Management- Clutters of Communications