THIRD SEMESTER

COURSE TITLE	Paper Code	MARKS				
		THEORY		PRACTI-CAL		TO-TAL
		INTER-NAL	EXTER-NAL	INTERNAL	EXTER-NAL	
INFORMATICS FOR DISASTER MANAGEMENT	MBA (DM)/S/310	40	60			100
QUANTITATIVE TECHNIQUES FOR DISASTER MANAGEMENT	MBA (DM)/S/320	40	60			100
CRISIS MANAGEMENT	MBA (DM)/S/330	40	60			100
MICRO FINANCING FOR REHABILITATION AND RESETTLEMENT	MBA (DM)/S/340	40	60			100

FOURTH SEMESTER

COURSE TITLE	Paper Code	MARKS				
		THEORY		PRACTI-CAL		TO-TAL
		INTER-NAL	EXTER-NAL	INTERNAL	EXTER-NAL	
RESEARCH METHODS IN DISASTER MANAGEMENT	MBA (DM)/S/410	40	60			100
BANKING, FINANCE & INSURANCE IN DISASTER MANAGEMENT	MBA (DM)/S/420	40	60			100
RISK ASSESSMENT	MBA (DM)/S/430	40	60			100
ENVIRONMENTAL IMPACT ASSESSMENT (EIA) AND DISASTER MANAGEMENT	MBA (DM)/S/440	40	60			100

MBA (DM)/S/301   **INFORMATICS FOR DISASTER MANAGEMENT**

Maximum Time : 3 Hrs.	**University Examination**	: 60 Marks
Total Marks : 100	**Continuous Internal Assessment**	: 40 Marks

Minimum Pass Marks: 40%

A) Instructions for paper-setter
1. The question paper will consist five sections namely A, B, C, D and E.
2. Sections A, B, C and D will have two questions from the respective sections of the syllabus and will carry 14 marks each. Candidates have to attempt at least one question compulsorily from each section.
3. Section E will comprise of 10 short answer type questions, which will cover the entire syllabus and will carry 14 marks candidates will have to attempt any 7 questions.

B) Instructions for candidates
1. Candidates are required to attempt one question each from sections A, B, C and D of the question paper and the any seven questions from section E.
2. Use of non-programmable scientific calculator is allowed.

Section : A
Introduction to Computers – Its Components and Functions, Applications in Various Fields of Science and Management.
Data Storage – Primary and Secondary Storage, Introduction to Various Computer devices Such a Keyoard, Mouse, Printers, Disk Files, Floppies etc. Data Representation – Number Systems, Characte Representation Codes, Binary, Hex, Octal Codes and their conversion. Binary Arithmetic, Floating Point Arithmetic, Signed and Unsigned Numbers. Concepts of the Finit Storage Bits, Bytes Kilo, Mega and Gigabytes Concepts of Character Representation. Concept of Computing, Contemporary, Operating Systems Such as DOS, Window'95, UNIX etc. (only brief user level description). Introduction to Internet and its use.

Section :B
Use of MS-Office Packages. Introduction to Programing- Concept Algorithms, Flow Charts, Example of Algorithms Such as how to add ten number, Roots of a Quadratic Equation. Concept of Sequentially Following up the step of a algorithm. Notion of Program, Programmability and Progamming Languages, Structure of Programs, Object Codes, Compilers, Writing a Simple Program in a Language Like "C".

Section : C
Role of Information in Disaster Management; Federal Role in Disasters and Disaster Information, Disaster Information and Management Community , Conceptual Flow of Disaster-related Information. Needs of the Users of Disaster Information ; Background, Capturing User Needs, Current Environment. Disaster Information Provider; Responsibilities of the Provider Community, Functions of the Provider Community, Information Generation, Recent Changes. Disaster Information Infrastructure; Information Infrastructure Needs by Disaster Phase, Modes of Communication, Future of the Disaster Information Infrastructure.

Section : D
Moving to a Disaster Information Network (DIN) for the Future; Background, Findings, Foundation for Addressing Needs, Vision for a Future Disaster Information Network, Fundamental Need to Involve Stakeholders. Recommendation and Action Plan; Policy and Organization Implementation, Phased Approach; The Global Extension, Analysis of the Ratio of Cost to Benefits. Global Consideration ; Global Phase, GIDN International Goals, Priorities, GDIN International Model, Possible GDIN Management Packages, Possible GDIN Partners.

Reference:
- Gary B. Shelley, Thomas I Cashmar, Mistry E. Vermoat Discovering Computer 2005: A Gateway to Information.

MBA (DM) - 302   QUANTITATIVE TECHNIQUES FOR DISASTER MANAGEMENT

Maximum Time   : 3 Hrs.   **University Examination   : 60 Marks**

Total Marks   : 100   **Continuous Internal Assessment   : 40 Marks**

Minimum Pass Marks: 40%

A) Instructions for paper-setter
1.   The question paper will consist five sections namely A, B, C, D and E.
2.   Sections A, B, C and D will have two questions from the respective sections of the syllabus and will carry 14 marks each. Candidates have to attempt at least one question compulsorily from each section.
3.   Section E will comprise of 10 short answer type questions, which will cover the entire syllabus and will carry 14 marks candidates will have to attempt any 7 questions.

B) Instructions for candidates
1.   Candidates are required to attempt one question each from sections A, B, C and D of the question paper and the any seven questions from section E.
2.   Use of non-programmable scientific calculator is allowed.

Section: A
Introduction to Decision Theory, Decision Under Certainty , Risk and Uncertainty , Decision Tree Analysis, Marginal Analysis, Case Discussions on Decision Theory Involving Disaster Scenario.

Section :B
Game Theory: Characteristics , Two Person Zero Sum Game, Pure and Mixed Strategy, Law of Dominance, Modified Dominance , Graphical Method Case Discussion on Game Theory and Application.

Section :C
Transportation Problem : Initial Basic Feasible Solution, Test for Optimality, Application in Disaster Scenario, Case Studies. Assignment Problem; Hungarian Method, Multiple, unbalanced and Maximization, Case Discussion on Assignment Problems and Application.

Section: D
Network Analysis: PERT and CPM , Concepts of Slack , Floats , Crashing, Application of Network Techniques, Case Discussion.

Reference:
- Mottegoga , N.T. and Rosso. R. 1998 Statistics , Probability and Reliability for Civil and Environmental Engineers, MCGraw-hill, NY
- Johnson, R.A. 1999 Miller and Freund's Probability and Statistics for Engineers, Prentice-Hall of India Pvt.Ltd. New Delhi.
- Manly, B.f.J. 1994 Mutivariate Statistical Methods, A Primer. Chapman and Hall, London
- Manly , B.f.J. 2001 Statistics for Environmental Science and Management Chapmana and Hall London

MBA (DM)/S/303   CRISIS MANAGEMENT

Maximum Time	: 3 Hrs.	**University Examination**	: 60 Marks
Total Marks	: 100	**Continuous Internal Assessment**	: 40 Marks

Minimum Pass Marks: 40%

A) Instructions for paper-setter

1. The question paper will consist five sections namely A, B, C, D and E.
2. Sections A, B, C and D will have two questions from the respective sections of the syllabus and will carry 14 marks each. Candidates have to attempt at least one question compulsorily from each section.
3. Section E will comprise of 10 short answer type questions, which will cover the entire syllabus and will carry 14 marks candidates will have to attempt any 7 questions.

B) Instructions for candidates

1. Candidates are required to attempt one question each from sections A, B, C and D of the question paper and the any seven questions from section E.
2. Use of non-programmable scientific calculator is allowed.

Section: A
Disasters Issues and Crisis Management; Definitions and Overview of Risks and Dangers, Impact of Globalization on Crisis and Mass Disasters

Section: B
Identifying Potential Crisis Situations: Discuss Selected Case Studies to Analyze the Potential Impact of Disasters, prepare a Foundation of a Sound Crisis Management Plan.

Section: C
Crisis Management Preparedness: Preparing the Plan, Training and Testing, Crisis Communication, Stress Management, Crisis Operation Guidelines.

Section: D
The Disaster Recovery Planning: Emergency Management Teams, National and International Disaster Recovery Policies, Managing the Economy and Essential Services in Emergencies, managing the Media and Popular Conscience.

Reference:
• Mutchopadhyaya, A.K. 2005 Crisis and Disaster Management Tuberlance and Aftermath" newage International Publications, New Delhi

MBA (DM) - 304   MICRO FINANCING FOR REHABILITATION AND RESETTLEMENT

Maximum Time	**: 3 Hrs.**	**University Examination**	**: 60 Marks**
Total Marks	**: 100**	**Continuous Internal Assessment**	**: 40 Marks**

Minimum Pass Marks : 40%

A) Instructions for paper-setter

1. The question paper will consist five sections namely A, B, C, D and E.
2. Sections A, B, C and D will have two questions from the respective sections of the syllabus and will carry 14 marks each. Candidates have to attempt at least one question compulsorily from each section.
3. Section E will comprise of 10 short answer type questions, which will cover the entire syllabus and will carry 14 marks candidates will have to attempt any 7 questions.

B) Instructions for candidates

1. Candidates are required to attempt one question each from sections A, B, C and D of the question paper and the any seven questions from section E.
2. Use of non-programmable scientific calculator is allowed.

Section: A
Introduction to Micro Finance: Definition of Micro Finance, Evolution of Micro Finance as a Means of Development, Context of Evolution and Role of Micro Finance Institutions in Poverty Alleviation, Food Security and Alternate Livelihood Support Systems.

Section: B
Micro Finance Models & Institutions: Bangladesh Grameen Bank Model, SHG-Bank Linkage Model, Community Banking , Credit Unions and Co-operatives, SHG-NGO-Bank Linkage Model, Success Stories, NARBARD, MYRADA , SEWA, PRADAN Village Bnak of FINCA (Latin America) SANASA of Sri Lanka, Not for Profit MFI's (NGO-MFI's and Non-Porfit Companies), MACS (Mutually Aided Co-operatives Societies) For Porfit MFI's, NBFCs.

Section: C
Role of Different Agencies: International Agencies, World Bank, ADB, DFID & International NGO's , National Agencies NARBARD, RBI, RMK, Ministry of Rural Development , State Government Agencies, RRB's & Co-operatives & national & Local NGO's.

Section: D
Micro Finance in Disaster Mangement; Micro Finance Based Community Development Project, Water Shed Management Schemes, Forest Conservation, Coast Line Plantation, Community Aforestation, Case Studies.

Reference:
- Hulme, David and Paul Mosley, "Finance Against Poverty", Routledge London, 1996.
- Meyer, Richard L, "Micro Finance, Poverty Alleviation and Improving Food Security: Implications for India" in Food Security and Environmental Quality, CRC Pres LLC, Boca Raton, FL. 2002.
- ADB, "Finance for the Poor: Micro Finance Development Strategy", Asian Development Bank, Manila, 2000.
- Bouman, FJA, "Small, Short and Unsecured: Informal Rural Finance in India", Oxford University Press, Delhi, 1989.

MBA (DM) - 401   RESEARCH METHODS IN DISASTER MANAGEMENT

Maximum Time   : 3 Hrs.   **University Examination**   : 60 Marks

Total Marks   : 100   **Continuous Internal Assessment**   : 40 Marks

Minimum Pass Marks: 40%

A) Instructions for paper-setter
1. The question paper will consist five sections namely A, B, C, D and E.
2. Sections A, B, C and D will have two questions from the respective sections of the syllabus and will carry 14 marks each. Candidates have to attempt at least one question compulsorily from each section.
3. Section E will comprise of 10 short answer type questions, which will cover the entire syllabus and will carry 14 marks candidates will have to attempt any 7 questions.

B) Instructions for candidates
1. Candidates are required to attempt one question each from sections A, B, C and D of the question paper and the any seven questions from section E.
2. Use of non-programmable scientific calculator is allowed.

Section : A
Introduction Research – Definition, Scope and Objective, Types, Approaches, Significance, Scientific Investigation. The Research Process – the Broad Problem Area, Preliminary Data Collection, Problem, Selection and Definition, Theoretical Framework, hypothesis Development and Elements of Research Design, Expperimental Design – the Laboratory Experiment , Variables, Validity, Types of Experimental Designs.

Section: B
Data Measurement, Collection, Processing and Analysis, Measurement Measurement in Research, Operational Definition, measurement Scales, Scaling, Scaling Techniques , Reliability and Validity, Data Collection – Sources of Data, Data Collection Methods, Interviewing, Questionnaires, Others Methods of Data Collection. Data Processing and Analysis – Review of Statistical Data Analysis.

Section: C
Sampling – Introduction, Need and Purpose of Sampling , Population and Sample , Population Frame, Sampling with and without Replacement , Population parameters. Sampling Theory – Sampling Distributions, parameter Estimation, Hypothesis Testing, Sampling Designs – Probability and Non-probability Sampling.

Section: D
Interpretation and Report Writing – Interpretation , meaning, Need , Technique, Report Writing – the Research Proposal , Report , Integral parts of the Report, Steps Involved in Report Writing, Types of Reports, Oral Presentation, Conclusions.

Reference:
- Singleton, R.A.Jr. and Straits B.C. 1999 Approaches to Social Research Oxford university Press NY
- Moore D.S. 1999 The Baisc Practice of Statistics W.H. Freedman NY
- De Vaus D.A. 1995 Surveys in Social Research Allen & Unwin Sydney NSW 1995
- Foddy W. 1994 Constructing Questions for Interviews and Questionnaires Cambridge University Press Cambridge.
- Scarbrough E.E. Tanernbaum 1998 Research Strategies in the Social Sciences Oxford University Press Oxford.

MBA (DM) - 402   BANKING, FINANCE & INSURANCE IN DISASTER MANAGEMENT

Maximum Time   : 3 Hrs.   **University Examination   : 60 Marks**

Total Marks   : 100   **Continuous Internal Assessment   : 40 Marks**

Minimum Pass Marks: 40%

A) Instructions for paper-setter
1.   The question paper will consist five sections namely A, B, C, D and E.
2.   Sections A, B, C and D will have two questions from the respective sections of the syllabus and will carry 14 marks each. Candidates have to attempt at least one question compulsorily from each section.
3.   Section E will comprise of 10 short answer type questions, which will cover the entire syllabus and will carry 14 marks candidates will have to attempt any 7 questions.

B) Instructions for candidates
1.   Candidates are required to attempt one question each from sections A, B, C and D of the question paper and the any seven questions from section E.
2.   Use of non-programmable scientific calculator is allowed.

Section: A
Introduction to Banking & Finance : Theory of Money & Credit, Money and Banking Systems, Bank Credit and Clearing Operations, Banking Law, Bank Operations Analysis, Tax Adminstration, Public Budgeting and Finance Systyems, State and Local Finaces.

Section: B
Insurance and Risk Management: Introduction to Risk, Risk Identification and Evaluation, Property Loss Exposures, Life, health and Loss of Income Exposures, Risk Management Techniques, Insurance principles and Policy Provisions, Insurance Industry and Regulatory Framework.

Section: C
Welfare Economics: Public Goods, Private Goods, Demand Revealing Mechanism, Externalities, Solution to the Problem of Externalities, Command and Control Approach, market Based Approach, Taxes and Subsidies, Tradable Permits.

Section: D
Insurance Policies for Disaster Management : Evaluation of Risk Funding and Risk Transfer Policies, Catastrophe Insurance Pool, Reserve Funds and Contingent Credit Policies, Role of Government and Market Participants, insurance Policy Design , Fiscal Cost of Relief and Reconstruction, Grants and Low Interest Loan for Reconstruction, Case Studies and Review of Disaster Insurance Models.

Reference:
*   National Disater Response Plan NCDM, New Delhi 2001.
*   Contemporary Natural and Manmade Disaster Master of Disaster Mitigation. World Institution Building Programme Centre 2004.

MBA (DM)/S/403   RISK ASSESSMENT

Maximum Time   : 3 Hrs.   **University Examination**   : 60 Marks

Total Marks   : 100   **Continuous Internal Assessment**   : 40 Marks

Minimum Pass Marks: 40%

A) Instructions for paper-setter

1. The question paper will consist five sections namely A, B, C, D and E.
2. Sections A, B, C and D will have two questions from the respective sections of the syllabus and will carry 14 marks each. Candidates have to attempt at least one question compulsorily from each section.
3. Section E will comprise of 10 short answer type questions, which will cover the entire syllabus and will carry 14 marks candidates will have to attempt any 7 questions.

B) Instructions for candidates

1. Candidates are required to attempt one question each from sections A, B, C and D of the question paper and the any seven questions from section E.
2. Use of non-programmable scientific calculator is allowed.

Section: A
Introduction to Risk Evaluation: Definition of Risk and Fundamentals of Risk Analysis, Environmental Hazards, Exposure and Risk Assessment, Risk Evaluation and Management, Basic methodology in Risk Assessment, hazard Identification, Dose Response Assessment , Exposure Assessment, and Risk Characterization.

Section: B
The Assessment for Different Disaster Types , The Extreme Event Analysis, Hazard Ecology, Chemical Load and Environmental Health Risk, Carcinogenic Materials and Environment, Impact on Immune, Reproduction and Nervous System , Risk Adjustment, Choice and Loss Acceptance, Spectacular Deaths and Carcinogens.

Section : C
The Collection of Data and Information , Quantified Risk Assessment for Industrial Accidents, Release of Toxics Products, Dispersion Analysis and HAZOP Study, Risk Assessment Applications for Disaster Mitigation and management Problems.

Section : D
Design of Risk Management Program, Methodology of Stocktaking, Concept of Vulnerability and Analysis, Exposure, Preparedness, Prevention and Response Analysis.

Reference:
- Freeman , H.M. (ed) 1989 Standard handbook of hazardous Waste Treatment and Disposal McGraw, H HY.
- William, P.L. and J.L. Burson, 1985 Industrial Toxicology Safety and Health Applications in the Work Place, Van Nostrand Reinhold, NY.
- Willson, R. and E.A. C.Crouch, 1987 Risk Assessment and comparisons; An Introduction Science 17, 1987, pp 267-270.
- Petak , W.J. and Atkisson A.A. Natural Hazard Risk Assessment and Public Policy; Anticipating and Unexpected, Springer, NY 1982

MBA (DM)/S/404 ENVIRONMENTAL IMPACT ASSESSMENT (EIA) AND DISASTER MANAGEMENT

Maximum Time	: 3 Hrs.	**University Examination**	: 60 Marks
Total Marks	: 100	**Continuous Internal Assessment**	: 40 Marks

Minimum Pass Marks : 40%

A) Instructions for paper-setter

1. The question paper will consist five sections namely A, B, C, D and E.
2. Sections A, B, C and D will have two questions from the respective sections of the syllabus and will carry 14 marks each. Candidates have to attempt at least one question compulsorily from each section.
3. Section E will comprise of 10 short answer type questions, which will cover the entire syllabus and will carry 14 marks candidates will have to attempt any 7 questions.

B) Instructions for candidates

1. Candidates are required to attempt one question each from sections A, B, C and D of the question paper and the any seven questions from section E.
2. Use of non-programmable scientific calculator is allowed.

Section: A

Introduction to EIA: Purpose of EIA, Environmental Components, Projects and its Environmental Impacts, Environmental Impact Statement, Projects Screening and Scoping Environmental Baseline Study.

Section: B

Impact Assessment Procedure: Applications of Matrices, networks and Overlay Maps, Environmental Evaluation System, Transanational Effects of Projects, Impact Identification, Impact Prediction, Evaluation and Mitigation, Monitoring and Environmental Auditing, Regional and Strategic EIA, Environmental management Plan, Cost Benefit Analysis and its Dimensions, Problems of EIA in developing Countries, Public Participation in Environmental Decision Making, presentation and review, EIA Report and Its Contents.

Section: C

GIS in Disaster Management; GIS as Effective Tool in Disaster Management and Planning , Response Requirement Study, Alternate Route for Sending Relief and Shortest Evacuation Routes. Display and Identification of Damaged and Unsafe Structures Map Creation for Action Plan Identification of Risk and Planning Needs.

Section: D

Case Studies; River Valley Projects Opencast Mining Projects, Urbanization and High Way Project.

Reference:

- John Glasson , Riki Therivel and Andrew Chadwick Introduction to Environmental Impact Assessment, 2nd Ed. UCL Press Philadelphia, USA 1994
- Singh , R.B. Space Technology for Disaster Monitoring and Mitigation on India, INCEDE, University of Tokyo
- Larry W. Canter Environmental Impact Assessment , 2nd Ed McGraw Hill NY, 1996
- Richard K. Morgan Environmental Impact Assessment: A Methodological Perspective, Kluwar Academic Publications, Boston, 1998.