Siliguri Institute of Technology

## Criteria 1.1.2 - The institution adheres to the academic calendar including for the conduct of CIE

## List of sample documents

1. Institute Academic Calendar
2. Sample Course Description
3. Sample Question paper of Internal Examination
4. Sample Notification of 1st Internal Examination
5. Sample Notification of 2 nd Internal Examination
6. Sample Assignment
7. Sample Quiz
8. Sample Result Sheet


## SILIGURI INSTITUTE OF TECHNOLOGY

Academic/activity Calendar for the year 2020-2021

## ODD SEMESTER

| SI, No. | Commencenent | Time / Duration |  |
| :---: | :---: | :---: | :---: |
|  |  | Continuing batch | New batch |
| 1. | courses) | 18.08 .2020 |  |
| 2. | Enrolment of students | 18.08 .2020 | 16.09.2020 |
|  | Odd Semester training | 27.11.2020 | 20.02.2021 |
| 3. | (In case of any holidays, training may be extended.) | $\begin{gathered} 02.11 .2020 \text { to } \\ 12.11 .2020 \end{gathered}$ | $\begin{gathered} 19.02 .2021- \\ 23.02 .2021 \end{gathered}$ |
| 4. | Submission of CA I | 21.01.2021 - |  |
| 5. | $1{ }^{\text {st }}$ Internal Test | 28.01.2021 |  |
| 6. |  | 19.01.2021-25.01.2021 |  |
| 6. | Submission of CA II | $\begin{gathered} 08.02 .2021 \text { - } \\ 13.02 .2021 \\ \hline \end{gathered}$ |  |
| 7. | Submission of CA III \& PCA1 | 22.02.2021 - | 24.02.2021 - |
| 8. | $2{ }^{\text {nd }}$ Internal Test | 25.02.2021 | $26.02 .2021$ |
| 9. | Submission of CA IV | 02.03.2021-05.03.2021 |  |
| 10. | Submission of PCA2 | 02.03.2021-05.03.2021 |  |
| 11. | Pre-examination activities / form fill-up | 24.03.21-27.03.21 |  |
| 12. | Student's course survey | 27.02.2021 |  |
| 13. | Practical Examinations, Sessionals, Vivavoce | 24.03.21-27.03.21 |  |
| 14. | Theory Examinations | 28.03.2021-05.04.2021 |  |
|  |  | 12.03.2021-26.03.2021 |  |

Note : The academic Calendar is subject to modification as per the advice from the University and on the advisories of the other statutory bodies in the Covid-19 pandemic situation.



## SILIGURI INSTITUTE OF TECHNOLOGY

Academic/activity Calendar for the year 2020-2021

## EVEN SEMESTER

| SI. No. | Event | Time / Duration |  |
| :---: | :---: | :---: | :---: |
|  |  | Continuing batch | New batch |
| 1. | Commencement of Academic Program (AICTE courses) | 12.04.2021 |  |
| 2. | Enrolment of students for Even Semester | 20.04.2021 | 24.04.2021 |
| 3. | Submission of CA I | 28.04.2021-03.05.2021 |  |
| 4. | $1^{\text {st }}$ Internal Test | 01.04.2021-07.04.2021 |  |
| 5. | Submission of CA II | 27.05.2021-31.05.2021 |  |
| 6. | Submission of PCA1 | 27.05.2021-31.05.2021 |  |
| 7. | Submission of CA III | 25.06.2021-30.06.2021 |  |
| 8. | $2^{\text {nd }}$ Internal Test | 25.05.2021-31.05.2021 |  |
| 9. | Submission of CA IV | 21.07.2021-24.07.2021 |  |
| 10. | Submission of PCA2 | 21.07.2021-24.07.2021 |  |
| 11. | Pre-examination activities / form fill-up | 29.06.2021 |  |
| 12. | Student's course survey | 21.07.2021-24.07.2021 |  |
| 13. | Practical Examinations, Sessionals, Vivavoce | 05.08.2021-08.08.2021 |  |
| 14. | Theory Examinations | $\begin{gathered} 13.07 .2021-20.07 .2021 \text { (Final Year) } \\ \mathbf{0 9 . 0 8 . 2 0 2 1 - 2 1 . 0 8 . 2 0 2 1} \text { (Others) } \\ \hline \end{gathered}$ |  |

Note : The academic Calendar is subject to modification as per the advice from the University and on the advisories of the other statutory bodies in the Covid-19 pandemic situation.


# DEPARTMENT: <br> Computer <br> Science <br> Engineering <br> PAPER NAME: Artificial Intelligence PAPER CODE : PEC- IT 501B 

## Course Title: ARTIFICIAL INTELLIGENCE

Paper Code: PEC- IT501B
Semester: -1 ${ }^{\text {ST }}$ Year: $3^{\text {RD }}$

Name of the Faculty: Prof. Alok Basu

E-mail : basualok11@gmail.com

## i) Course Objective:

Students will be able to develop a basic understanding of the building blocks of AI as presented in terms of intelligent agents: Search, Knowledge representation, inference, logic, and learning.

## ii) Course Outcomes:

After completion of this course the students are expected to be able to demonstrate following Knowledge, skills and attitudes
a) The Students will be able to:

| Code | Outcomes | Targets |
| :---: | :--- | :---: |
| CS703C.1 | Explain the various types of AI agent and search algorithm (uninformed, <br> informed, heuristic, constraint satisfaction, genetic algorithms, game <br> playing.( BT-Level 5) | $60 \%$ marks |


| CS703C.2 | Develop the basic knowledge-based system with the help of knowledge <br> representation.(BT-Level3) | $60 \%$ marks |
| :---: | :--- | :---: |
| CS703C.3 | Analyze the working knowledge of reasoning in the presence of <br> probabilistic approaches.(BT-Level 4) | $60 \%$ marks |
| CS703C.4 | Describe the notion of machine learning techniques.(BT-Level 4) | $60 \%$ marks |

b) Once the student has successfully complete this course, he/she must be demonstrate the following:

| SN | QUESTION | BT- LEVEL |
| :---: | :--- | :---: |
| 1. | What is an intelligent agent? What are the types of intelligent agent? | 5 |
| 2. | Compare the different types of search techniques and also calculate the <br> time and space complexity. | 5 |
| 3. | Explain alpha -beta cut-off procedure. | 5 |
| 4. | What is first order predicate logic? | 1 |
| 5. | Explain the tautology with example | 3 |
| 6. | Convert the sentence into predicate logic : <br> i) Some people did not come for all meetings. <br> ii) Not everyone loves Ravana. | 3 |
| 7. | Explain the probabilistic reasoning. | 3 |
| 8. | When one has cold, one usually has a high temperature (80\% of the time). At any <br> time around 1 in every 10000 people has a cold and I in every 1000 people have <br> high temperature. Now suppose you have high temperature. What is the <br> probability that you have cold? | 3 |
| 9. | Write short note on machine learning | 3 |

## Artificial Intelligence

Code: PEC-IT501B
Contacts: 3L

| Name of the Course: | Artificial Intelligence |
| :---: | :---: |
| Course Code: PEC-IT501B | Semester: V |
| Teaching Scheme | Examination Scheme |
| Theory:3 hrs./week | Mid Semester exam: 15 |
| Tutorial: NIL | Assignment and Quiz: 10 marks |
|  | Attendance :5 marks |
| Practical: NIL | End Semester Exam :70 Marks |
| Credit Points: 3 |  |


| Unit | Content | Hrs/Unit |
| :--- | :--- | :--- |


| 1 | Introduction [2] <br> Overview of Artificial intelligence- Problems of AI, AI technique, Tic-Tac-Toe problem. <br> Intelligent Agents [2] <br> Agents \& environment, nature of environment, structure of agents, goal based agents, utility based agents, learning agents. <br> Problem Solving [2] <br> Problems, Problem Space \& search: Defining the problem as state space search, production system, problem characteristics, issues in the design of search programs. | $\begin{gathered} 6 \\ {[\text { PEC }} \\ \text { IT501B- } \\ \text { C01] } \end{gathered}$ |
| :---: | :---: | :---: |
| 2 | Search techniques [5] <br> Solving problems by searching :problem solving agents, searching for solutions; uniform search strategies: breadth first search, depth first search, depth limited search, bidirectional search, comparing uniform search strategies. <br> Heuristic search strategies [5] <br> Greedy best-first search, A* search, memory bounded heuristic search: local search algorithms \& optimization problems: <br> Hill climbing search, simulated annealing search, local beam search, genetic algorithms; constraint satisfaction problems, local search for constraint satisfaction problems. <br> Adversarial search [3] <br> Games, optimal decisions \& strategies in games, the minimax search procedure, alphabeta pruning, additional refinements, iterative deepening. | 13 PEC IT501B- C01] |
| 3 | Knowledge \& reasoning [3] <br> Knowledge representation issues, representation \& mapping, approaches to knowledge representation, issues in knowledge representation. | 3 PEC IT501B- C02] |
| 4 | Using predicate logic [2] <br> Representing simple fact in logic, representing instant \& ISA relationship, computable functions \& predicates, resolution, natural deduction. <br> Probabilistic reasoning [4] <br> Representing knowledge in an uncertain domain, the semantics of Bayesian networks, Dempster-Shafer theory, Fuzzy sets \& fuzzy logics. | 6 PEC IT501B- C02] \& PEC IT501B- C03] |
| 5 | Natural Language processing [2] <br> Introduction, Syntactic processing, semantic analysis, discourse \& pragmatic processing. <br> Learning [2] <br> Forms of learning, inductive learning, learning decision trees, explanation based learning, learning using relevance information, neural net learning \& genetic learning. <br> Expert Systems [2] <br> Representing and using domain knowledge, expert system shells, knowledge acquisition. | $\begin{gathered} 6 \\ \text { PEC } \\ \text { IT501B- } \\ \text { C04] } \end{gathered}$ |

## Topic Layout:

| Topic No | Topic | Lecture Hours |
| :---: | :---: | :---: |


| Topic 1 | Introduction | 2 HRS |
| :---: | :---: | :---: |
| Topic 2 | Intelligent Agent | 2 HRS |
| Topic 3 | Problem Solving | 2 HRS |
| Topic 4 | Search Techniques | 5 HRS |
| Topic 5 | Heuristic search | 5 HRS |
| Topic 6 | Adversarial search | 3 HRS |
| Topic 7 | Knowledge\& reasoning | 3 HRS |
| Topic 8 | Predicate logic | 2 HRS |
| Topic 9 | Knowledge using rules | 3 HRS |
| Topic 10 | Probabilistic reasoning | 4 HRS |
| Topic 11 | Planning | 2 HRS |
| Topic 12 | Learning | 2 HRS |
| Topic 13 | Expert Systems | 2 HRS |
| Topic 14 | Natural Language processing | 2 HRS |
| Total |  | 45 HRS |

c) Textbooks:

1. Artificial Intelligence, Ritch\& Knight, TMH.
2. Artificial Intelligence A Modern Approach, Stuart Russel Peter Norvig Pearson.
d) Reference Books:
3. Introduction to Artificial Intelligence \& Expert Systems, Patterson, PHI
4. Logic \& Prolog Programming, Saroj Kaushik, New Age International

## V) Evaluation Scheme:

1) THEORY

| Evaluation Criteria | Marks |
| :--- | :---: |
| First \& Second Internal Exam | 15 |
| Quiz/ Assignments | 10 |
| Attendance | 5 |
| University Exam | 70 |
| Total | 100 |

*Two internal examinations are conducted; based on those two tests, average of them are considered in a scale of 15 .

| Grade | Marks |
| :--- | :--- |


| O | $90 \%$ and above |
| :--- | :--- |
| E | $80-89.9 \%$ |
| A | $70-79.9 \%$ |
| B | $60-69.9 \%$ |
| C | $50-59.9 \%$ |
| D | $40-49.9 \%$ |
| F | Below $40 \%$ |

## VI) Weekly lesson plan

| Week | Lectures | Assignment |
| :---: | :---: | :---: |
| 1 | Overview of Artificial intelligence- Problems of AI | .......... |
|  | AI technique, Tic - Tac - Toe problem |  |
|  | Agents \& environment, nature of environment, structure of agents |  |
|  | Goal based agents, utility based agents, learning agents. |  |
| 2 | Problems, Problem Space \& search: Defining the problem as state space search | Assignment1 |
|  | Production system, problem characteristics, issues in the design of search programs |  |
|  | Solving problems by searching: problem solving agents, searching for solutions |  |
|  | Uniform search strategies: breadth first search |  |
| 3 | Uniform search strategies:depth first search | Assignment 2 |
|  | Depth limited search |  |
|  | Bidirectional search, comparing uniform search strategies |  |
|  | Hill climbing search, simulated annealing search |  |
| 4 | A* search, Best First Search | .............. |
|  | Properties of heuristic function |  |
|  | Constraint satisfaction problems, local search for constraint satisfaction problems. |  |
|  | Genetic algorithm |  |
| 5 | Games, optimal decisions \& strategies in games | Assignment 3 |


|  | The minimax search procedure |  |
| :---: | :---: | :---: |
|  | Alpha-beta pruning, additional refinements, iterative deepening. | ........... |
|  | Knowledge representation issues, representation \& mapping |  |
| 6 | Simple fact in logic, computable functions \& predicates and resolution |  |
|  | ISA relationship and natural deduction |  |
|  | Representing simple fact in logic, representing instant \& ISA relationship |  |
|  | Procedural verses declarative knowledge, Forward verses backward reasoning, matching, control knowledge |  |
| 7 | Representing knowledge in an uncertain domain, the semantics of Bayesian network | ............... |
|  | Fuzzy sets \& fuzzy logics, Dempster-Shafer theory |  |
|  | Overview, components of a planning system, Goal stack planning |  |
|  | Hierarchical planning, other planning techniques |  |
| 8 | Forms of learning, inductive learning, learning decision trees, explanation based learning | .................... |
|  | Neural net learning |  |
|  | Representing and using domain knowledge, expert system shells and knowledge acquisition |  |
|  | Introduction, Syntactic processing, semantic analysis |  |
| 9 | Basic knowledge of programming language like Prolog | ................... |
|  | Basic knowledge of programming language like Prolog |  |
|  | Basic knowledge of programming language like Prolog |  |
|  | Basic knowledge of programming language like Prolog |  |
| 10 | Revision on Week 2 to 5 | ................ |
|  | Revision on Week 6 to 9 |  |
|  | Discuss on University QP |  |

## SILIGURI INSTITUTE OF TECHNOLOGY MASTER OF BUSINESS ADMINISTRATION

## COURSE DESCRIPTION

 $2{ }^{\text {nd }}$ SEMESTER, $1^{\text {ST }}$ YEARSession: 2020-21 (Even Semester 2021)

## PAPER NAME: INDIAN ECONOMY \& POLICY PAPER CODE: MB 201 <br> (New Syllabus from Odd Semester 2018)

## Course File

## Course Title: Indian Economy \& Policy

Code: MB (N) 201
Semester: 2 ${ }^{\text {nd, }}$, Year $1^{\text {st }}$
Name of the Faculty: Mr Shomnath Dutta
E-mail: shomnath76@gmail.com
Class Schedule

| Lecture |  |  | Tutorial/Case Study | Practical |
| :--- | :---: | :---: | :---: | :---: |
| Monday |  |  | $03.50-04.40 \mathrm{pm}$ | N.A |
| Tuesday |  | $12.30-01.20 \mathrm{PM}$ |  | N.A |
| Wednesday | $11.40-12.30 \mathrm{PM}$ |  |  | N.A |
| Thursday | $10.50-11.40 \mathrm{AM}$ |  |  | N.A |
| Friday |  | $12.30-\mathbf{0 1 . 2 0} \mathrm{PM}$ |  | N.A |

## Hours for meeting students:

| Day | Time |
| :--- | :--- |
| Monday | $04.40 \mathrm{pm}-05.10 \mathrm{pm}$ |
| Tuesday | $01.30 \mathrm{pm}-02.00 \mathrm{pm}$ |
| Wednesday | $01.30 \mathrm{pm}-02.00 \mathrm{pm}$ |
| Thursday | $04.40 \mathrm{pm}-05.10 \mathrm{pm}$ |

## Course Objective

Students will acquire basic knowledge on different aspects of Macro Economics, Indian Economy and Policy.

## Course Outcomes

i. After completion of this course the students are expected to be able to demonstrate following knowledge, skills and attitudes.
The student will be able to:

| Description of COs |  | Target |
| :---: | :--- | :---: |
| CO1 | Understand the circular flow of income and the uses as well as the limits of Gross Domestic <br> Product(GDP) and real GDP and also understand the concept of national income (BT 5) | $75 \%$ |
| CO2 | Understand the three main macro economic problems related to recession, unemployment <br> and inflation. (BT 5) | $75 \%$ |
| CO3 | Analyze the economic implication of alternative policies (BT 4) | $70 \%$ |
| CO4 | Apply the concept of international trade based on comparative advantage (BT 3) | $60 \%$ |
| CO5 | Evaluate the consequences of basic macroeconomic policy options under differing <br> economic condition within the business cycle. (BT 2) | $60 \%$ |

ii. Once the student has successfully complete this course, he/she must be able to answer the following questions or perform/demonstrate the following:

| SI. | Question | BT Level |
| :--- | :--- | :--- |
| 1. | Derive money demand curve with the help of liquidity preference theory | BT 5 |
| 2. | If $\mathrm{C}=40+0.75 \mathrm{Y}, \mathrm{I}=140-10 \mathrm{r}, \mathrm{G}=100$, money demand=0.2Y-5r, money supply= $=185$, to be given <br> i) derive the equation of IS and LM curves <br> ii) find out equilibrium level of national income and interest | BT 5 |


|  | iii) If G increase by Rs 75 what will be the extent of crowding out? |  |
| :---: | :---: | :---: |
| 3. | Find out the value of Balanced Budget Multiplier in simple Keynesians' model | BT 4 |
| 4. | Consider a closed economy with govt. Budget expenditure, G and tax T in as simple Keynesian model. <br> a) Explain why govt. Expenditure multiplier is positive and why tax multiplier is negative. <br> b) Show that the balanced budget multiplier is 1 . <br> c) In an economy, consumption for $\mathrm{C}=50+0.80 \mathrm{Yd}$, Yd is the disposable income. <br> Investment (I) = 200, Govt. Spending (G) = 150, Tax (T) = 50 <br> i) Calculate equilibrium level of savings. <br> ii) Show that MPC + MPS $=1$. | BT 4 |
| 5. | If from the data given below, calculate (i) GDP as Market Price, (ii) GDP at factor cost and (iii) GNP.  <br>  GD. Billion) <br> (in Rs. <br> Household consumption expenditure 550 <br> Govt consumption expenditure 250 <br> Gross fixed capital formation 100 <br> Depreciation 150 <br> Indirect taxes 160 <br> Subsidies 40 <br> Exports 200 <br> Imports 250 <br> Net income from abroad 150 | BT 5 |
| 6. | Define Philips Curve, Explain why it is downward sloping in the short run but vertical in the long run. | BT 4 |
| 7. | "Trade between two countries arises only when comparative cost of producing commodities vary" discuss | BT 3 |
| 8. | What is meant by monetary policy? Write a note on objectives of monetary policy in India. In this connection evaluate RBIs monetary policy | BT 4 |
| 9. | What factors forced the government of India in 1991 to introduce structural adjustment programme? In this connection sketch out the major structural reforms and macroeconomic stabilization measures introduced since 1991 | BT 4 |
| 10. | Explain the impact of liquidity trap on the LM Curve. | BT3 |

## Topic/Unit/Chapter Layout

| Topic/Unit/Chapter | Lecture <br> Hours | Tutorials |
| :---: | :---: | :---: |
| MODULE I <br> 1. Circular Flow of Income | 3 | 3 |
| 2. Theory of Income Determination | 6 | 1 |
| 3. Introduction of Money and Asset Market | 4 | - |
| 4. Inflation and Unemployment | 3 |  |
| 5. Introduction to Foreign Trade \& International Linkages | 4 |  |
| MODULE II <br> 6. Indian Economy - An Overview | 4 | - |
| 7. New Industrial Policy | 4 |  |
| 8. Banking and Capital Market Reforms | 4 |  |
| 9. Monetary and Fiscal Policy Reforms | 4 | 1 |
| 10. Trade Policy Reforms | 4 |  |

## Textbooks

1. Lipsey \& Chrystal - Economics - Oxford University Press
2. Peterson \& Lewis - Managerial Economics - Pearson Education
3. H.L. Ahuza- Managerial Economics, S. Chand, 8th Ed
4. GEETIKA, Managerial Economics, McGraw-Hill Education 2nd Ed.
5. Macroeconomics- Suman Kalyan Chakraborty
6. Indian Economy: Dutt \& Sundaram

## Reference Books

1. D.N. Dwibedi - Managerial Economics, Prentice Hall.
2. Damodaran, Suma - Managerial Economics - Oxford University Press
3. Macroeconomics - Dornbusch, Fischer \& Startz

## Evaluation Scheme

1) Theory

| Evaluation Criteria (MAKAUT Odd Sem' 18 Onwards) | Marks |  |
| :--- | :---: | :---: |
| Internal Exam* | 50 | Total 100 <br> marks to be |
| Assignment | 40 | conserted <br> conver <br> into 30 <br> marks |
| Attendance | 5 | 5 |

* Two internal examinations are conducted; based on those two tests, average of them are considered in a scale of 15 .
Course Target Attainment Levels for Internal Assessment:

| Target (No. of Students) | Target Level of CO (Marks) | Attainment Level |
| :---: | :---: | :---: |
| $\leq 49.9 \%$ | $60 \%$ | 1 |
| $50-59.9 \%$ | $60 \%$ | 2 |
| $60 \%$ and above | $60 \%$ | 3 |

Overall Course Attainment Target $=70 \%$ of the students will get $60 \%$ marks.
Target has been set on the basis of last year's performance / result by the students, student quality this year and difficulty level of the course.
University Grading System:

| Letter Grade | Point |
| :---: | :---: |
| O | 10 |
| E | 9 |
| A | 8 |
| B | 7 |
| C | 6 |
| D | 5 |
| F | Less Than 5 |

Course target attainment levels for university assessment:

| Target (No. of Students) | Target Level of CO (Marks) in point | Attainment Level |
| :---: | :---: | :---: |
| $\leq 49.9 \%$ | 7 | 1 |
| $50-59.9 \%$ | 7 | 2 |
| $60 \%$ and above | 7 | 3 |

Overall Course Attainment Target $=60 \%$ of the students will get 7 points.
Mapping of Course Outcomes and Program Outcomes:

| Course <br> Outcomes | Program Outcomes |  |  |  |  |  | PSOs |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1 | 2 | 3 | 4 | 5 | 6 | 1 | 2 |
| CO. MB201.1 | 3 | 1 | 0 | 0 | 0 | 0 | 2 | 0 |
| CO. MB201.2 | 3 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| CO. MB201.3 | 0 | 3 | 0 | 0 | 0 | 0 | 2 | 1 |
| C O.MB201.4 | 0 | 2 | 2 | 0 | 0 | 0 | 2 | 1 |
| C O.MB201.5 | 0 | 3 | 0 | 0 | 0 | 0 | 2 | 1 |

## Learning Outcomes of MBA Program as specified by AICTE in 2018 (Considered as PO)

## P01: Business Environment \& Domain Knowledge

PO2: Critical Thinking, Business Analysis, Problem solving \& Innovative Solutions
P03: Global Exposure \& Cross Cultural Understanding
P04: Social Responsibilities \& Ethics
P05: Effective Communication
PO6: Leadership \& Teamwork
$1=$ courses in which the student will be exposed to a topic (BT level 1\&2)
$2=$ courses in which students will gain competency in that area (BT level 3-4)
3= courses in which students will master that skill (BT level 5-6)
C01 need for the knowledge of the circular flow of income and the uses as well as the limits of Gross Domestic Product (GDP) and real GDP and also understand the concept of national income. Hence it is highly linked with P01, partially linked with PSO1 and thinly linked with P02.
CO2 require application of the three main macro-economic problems related to recession, unemployment and inflation. Hence it is highly linked with P01 and partially linked with PS01.
C03 requires knowledge \& understanding of economic implication of alternative policies. Hence it is highly linked with PO2, partially linked with PSO1 and minimally linked with PSO2.
CO4 requires knowledge about the concept of international trade based on comparative advantage. Hence it is partially linked with PO2, PO3 \& PSO1 and minimally linked with PSO2.
CO5 deals with Evaluate the consequences of basic macroeconomic policy options under differing economic condition within the business cycle. Hence it is highly linked with PO2, partially linked with PSO1, and thinly linked with PSO2.
$\mathbf{P S O}_{1}$ : Identify the key issues facing a business or business subdivisions, utilize qualitative and quantitative methods to explore and solve critical business problems,
$\mathbf{P S O}_{2}$ : Incorporate diversity and multicultural perspectives while making business decisions as an entrepreneurs or decision maker.

| (vii) Delivery Methodology |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| Outcome | Method |  | Supporting Tools | Demonstration |
| CMB106.1 | Structured, partially supervised |  | Power point presentation, Numerical example | Assignment, Quiz, Internal |
| CMB106.2 | Structured, partially supervised |  | Numerical Class Lectures, Power point presentation | Assignment, Quiz, Internal |
| CMB106.3 | Structured, partially supervised |  | Numerical Class Lectures, Power point presentation | Case Study, Assignment, Quiz, Internal |
| CMB106.4 | Structured, partially supervised |  | Numerical Class Lectures, Power point presentation | Case Study, Assignment, Quiz, Internal |
| CMB106.5 | Structured, partially supervised |  | Numerical Class Lectures, real life example | Case Study, Assignment, Quiz, Internal |
| (viii) Assessment Methodology |  |  |  |  |
| Outcome | Assessment Tool | Specific Question/activity aligned to the Outcome |  |  |
| CMB101.1, CMB101.2, CMB101.3. | Internal Test $\quad$In <br> in <br> i) | In an economy, consumption for $\mathrm{C}=50+0.80 \mathrm{Yd}$, Yd is the disposable income. Investment $(I)=200$, Govt. Spending $(G)=150, T a x(T)=50$ i) Calculate equilibrium level of savings. ii) Show that MPC + MPS $=1$. |  |  |
| CMB101.3, CMB101.4, CMB101.5. | Assignment $\quad \begin{aligned} & \text { D } \\ & \text { b }\end{aligned}$ | Define Philips Curve, Explain why it is downward sloping in the short run but vertical in the long run. |  |  |
| CMB101.1, CMB101.2, CMB101.3, CMB101.4, CMB101.5. |  If <br> Examination Semester (Odd) s <br> i) <br> i) <br> i) <br> if) | If $\mathrm{C}=40+0.75 \mathrm{Y}, \mathrm{I}=140-10 \mathrm{r}, \mathrm{G}=100$, money demand $=0.2 \mathrm{Y}-5 \mathrm{r}$, money supply= 185 , to be given <br> i) derive the equation of IS and LM curves <br> ii) find out equilibrium level of national income and interest <br> iii) If G increase by Rs 75 what will be the extent of crowding out? |  |  |

## (ix) A. Weekly Lesson Plan

| Week | Topic of Lectures | Tutorial | Practical | Assignment |
| :---: | :---: | :---: | :---: | :---: |
| Week 1 | Module 1 Circular flow of income: National income accounting- terms and concepts, three methods of measuring GDP/GNP | Methods of measuring GDP/GNP | Not <br> Applicable as per MAKAUT Syllabus | Numerical on measuring GDP |
| Week 2 | Theory of Income Determination I: Simple Keynesian model: aggregate demand - aggregate supply method, savings-investment method, Concept of multiplier: autonomous expenditure multiplier, introducing the government, government expenditure multiplier, tax rate multiplier | Numerical on Income Determination |  | Numerical on Income Determination |
| Week 3 | Theory of Income Determination II: Balanced budget multiplier, open economy- export and imports multiplier, paradox of thrift, crowding out effect, business cyclephase and stabilization |  |  |  |
| Week 4 | Introduction of money and asset market IS-LM Model | IS-LM Model |  |  |
| Week 5 | Fiscal and Monetary policy using IS-LM |  |  |  |
| Week 6 | Concepts of inflation- demand pull and cost push, stabilization policies, Introduction to Philips curve as relation between inflation and unemployment | Philips curve, Concepts of BOP |  | Philips curve as relation between inflation and unemployment |
| Week 7 | Introduction to foreign trade and international linkages Concepts of balance of payments, Alternative exchange rate systems- fixed flexible and managed float, Comparative advantage as basis for trade, Tariff and nontariff barriers |  |  |  |
| Week 8 | Module 2: Indian economy - an overview, Evolution of Indian economy since independence, Liberalization of Indian economy since 1991 |  |  | Concept of depreciation and devaluation |
| Week 9 | Banking and capital market reforms: Banking structure in India, Composition of Indian capital market, SEBI and capital market reforms |  |  |  |
| Week 10 | Monetary and fiscal policy reforms: Composition of Indian money market, Components and instruments of monetary policy, Concepts and management of deficits | Instruments of monetary policy |  | Functions of Commercial Banks and Central Banks |
| Week 11 \& Week 12 | Trade policy reforms: Major components of trade policy reforms, Idea of FEMA \& NITI AYOG role and function, Current account and capital account convertibility |  |  | Instruments of monetary policy |

# Siliguri Institute of Technology <br> Department of <br> $\qquad$ ECE <br> $1^{\text {st }}$ Internal Exam - 2021 (Odd Semester) <br> February- 2021 

| Semester: 5 |  |
| :--- | :--- |
| th | Group: A \& B |
| Paper Code: EC 501 | Paper Name: Electromagnetic Waves |
| Full Marks: 30 | Time: 1hour |

Answer all questions:

## Q1.(Aligned to CO1)

i) $\nabla \times E=0$ means the electric field $\mathbf{E}$ is produced by the
a) Static Charge b)
b) Moving Charge C) E.M induction
d) Varying magnetic field
ii) For Conservative field which of the following equations holds good?
a) $\oint B \cdot d s=0$
b) $\int E \cdot d l=0$
c) $\int H \cdot d l=0$
d) $\int D \cdot d s=0$
iii) Point Charges $\mathrm{Q}_{1}=1 \mathrm{nC}$ and $\mathrm{Q}_{2}=2 \mathrm{nC}$ are at a distance apart. Which of the following statements are incorrect
a) The force on $Q_{1}$ is repulsive
b) The force on $\mathrm{Q}_{2}$ is the same in magnitude as that on $\mathrm{Q}_{1}$
c) As the distance between them decreases, the force on $Q_{1}$ increases linearly
d) The force on $\mathrm{Q}_{2}$ is along the line joining them
iv) Displacement current can flow through
a) Capacitor
b) Inductor.
C) resistor
d) None of these
v) Divergence of which quantity will be zero
a) $\mathbf{E}$
b) $\mathbf{D}$
c) $\mathbf{H}$
d) $\mathbf{B}$

## Q2.(Aligned to CO2)

i) What is loss tangent? Derive the expression for intrinsic impedance when the wave is propagating through lossy dielectric.

## OR

ii) Prove that the electromagnetic power passing through free space is given by the expression

$$
E \times H W / m^{2}
$$

## Q3. (Aligned to CO3)

i) Derive the expression for: a) input impedance of a lossless transmission line. b) input impedance of a $\lambda$ $\frac{-}{4}$ transmission line.

## OR

ii) a) Derive the voltage and current equation of two wire transmission line. obtain the expression for $Z_{0}, \alpha$ and $\beta$ of a distortion less transmission line.

## Online Notice for $1^{\text {st }}$ Internal (CA 2)_MBA 4 ${ }^{\text {th }}$ Semester_Even Sem'21


Stream Classwork Peoplo Marks
§ ::

Shomnath Dutta
17 May (Edited 18 May)
Find MAKAUT_Even Sem21_Online 1st Internal (CA 2) Routine for MBA 4th Semester 2021
From 24.05.21 to 26.05 .21 (In this Class Room)
For_ 1st Internal Test (CA 2)_MBA 4th Semester 2021_MAKAUT Even Semester 21
${ }^{*+}$ Questions if in Google Form whose link will be given here in G -Class room as per schedule
** Only 1 attempt will be allowed per each Examinee i.e. second time you cannot submit
Note: email of faculties are given for your knowledge
Mr Stomnath Dutla (shornath 76@gnail.com)
Ms Santana Guha (santanaguha@gmail com)
Dr Shuvendu Dey (shuvendudey@gmail.com)
Mr Debayan Nand (debaisit@gmail.com)
Mrs Swagata Nath (91swagata@gmailcom)
Mrs Paramita Chouchury (paramitac2079@gmal com)
Mr Rajeeb Dutral (dutraj rajeey@gmail.com)


Online Notice for $1^{\text {st }}$ Internal (CA 2)_MBA 2 ${ }^{\text {nd }}$ Semester_Even Sem'21

$\equiv$| MAKAUT Internal Assessment_MBA: SIT (119) |
| :--- |
| MBA 1st Year (1st \& 2nd Semester) |$\quad$ Stream $\quad$ Classwork $\quad$ People $\quad$ Marks $\quad$ : $: \%$


| Shomnath Dutta <br> 18 May (Edited 18 May) | ! |
| :---: | :---: |
| Find MAKAUT_Even Sem'21_Online 1st internal (CA 2) Routine for MBA 2nd Semester 2021 |  |
| From 24.05.21 to 26.05 .21 (in this Class Room) |  |
| For_ 1st Internal Test (CA 2)_MBA 2nd Semester 2021_MAKAUT Even Semester 21 |  |
| **Questions if in Google Form whose link will be given here in G-Class room as per schedule |  |
| ** Only 1 attempt will be allowed per each Examinee i.e. second time you cannot submit |  |
| Note: email of faculties are given for your knowledge |  |
| Mr Shomnath Dutta (shomnath76@gmail com) |  |
| Ms Santana Guha (santanaguna@gmail.com) |  |
| Dr Shuvendu Dey (shuvendudey@gmailcom) |  |
| Mr Debayan Nand (debaisit@gmail.com) |  |
| ROUTINE_ 1st Internal Eve... <br> Word |  |
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##  <br> F8-8IENRNS

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## Siliguri Institute of Technology

Computer Science \& Engineering Department
Year: $2^{\text {nd }}$ Semester: $2^{\text {nd }}$ Section: A
Marks: 50

Paper Name: Design \& Analysis of Algorithm
Paper Code: PCC-CS404
Submission Date: 20th May, 2021
Assignment policy:

- Assignments must be submitted in class as hardcopy (A4 sheet) on the due date mentioned in the assignment
- Early submissions are allowed.
- All assignments must be done individually. Anyone cheating will receive a zero for that assignment.
- Late submission policy: No late submissions will be allowed on any assignment. However, earlier submissions are allowed at any time before due.


## Assignment - II

1. Find an optimal parenthesization of a matrix-chain product whose sequence of dimensions is $\langle 5,10,3,12,5\rangle$.
2. For the graph shown below find the following.

- Adjacency list Representation
- Adjacency matrix representation.


3. Find out the shortest path from ' 0 ' to ' 7 ' using Dijkstra's Algorithm

4. Find out the Chromatic Number for the following Graph.

5. Find two solution set for the 4_Queen Problem.

|  |  |  |  |
| :--- | :--- | :--- | :--- |
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6. Find out the shortest path from 'A' to 'E' (if possible) using Bellman-Ford Algorithm

7. Find out the all pair shortest path using Floyd's Algorithm.

8. Find out the BFS and DFS Tree for the following undirected Graph.

9. Find out the BFS and DFS Tree for the following undirected Graph.

10. Find out the BFS Tree, DFS Tree and also classify all the edges for the following Graph.

11. Write the max-flow min-cut Theorem.
12. Use the Ford-Fulkerson Algorithm to find the maximum flow.


## Section 1 of 3

| QP_CA 4 (2nd Internal Test): MM 403_Sales | \% |
| :---: | :---: |
| \& Distribution Management_Marketing |  |
| Specialisation_Even Semester 2021 |  |
| MBA 4th Semester 2021 Marketing specialisation (Major + Minon) Full Marks 30 Time 1 hour |  |
| Email ${ }^{\text {* }}$ |  |
| Valld emal address |  |

Student Name

1. Dente Brahme
2. Reshav Gurung
3. Subham Subba
4. Raj Ghosh
5. Sourav Ghosh
6. Suvankar Sarkar

MAKAUT Roll Number *
\& Distribution Management_Marketing ?
Specialisation_Even Semester 2021
MBA 4th Semester 2021
Marketing Specialisation (Major + Minon)
Time 1 hour
Email *

1. 11900919001
2. 11900919002
3. 11900919003
4. 11900919004

Section 2 of 3
Group A (MCQ: Attempt all 20 Questions @ : : 1 Mark each: Total 20 Marks)

Description (optional)

1. At present, Government has restricted FDI in multi-brand retail to

None of the above
2. Which of the following Retail Audit is used to improve customer service delivery and to improve performance
20. A Salesman using company provided Cell phone is an example ofVariable element of his remuneration (CTC)Fixed element of his remuneration (CTC)Fringe benefitReimbursement component of selling expenses

After section 2 Continue to next section
-

## Section 3 of 3

## Group B (MCQ: Attempt all 5 Questions @ 2 : :

Marks each: Total 10 Marks)

Description (optiona)

21. Let's say that a particular sales job has a target incentive amount of Rs 40,000 and a target 1:2:5 in to ABC categories. (II) Calling Norms: A class would require 1 hour per customer and the call is to be made every week/B class would require $1 / 2$ hour per customer with $54 \%$ less calling frequency than $A / C$ class would require $25 \%$ time of $A$ with $50 \%$ calling frequency of $B$; (III) Estimated work time available task wise: Selling task $50 \% /$ Non-selling task $30 \% / T r a v e l l i n g$ task $20 \%$; (IV) Management decides 40 hrs /week as basic requirement considering average 4 weeks set apart for sick leaves, holidays, conferences \& trainings etc.

10 (approx)

7 (approx)Insufficient data
24. Batting Average of a Salesman isCalls/Days workedSales in Rs/OrdersOrders/Calls
24. Batting Average of a Salesman isCalls/Days workedSales in Rs/OrdersOrders/CallsRupee Sales/No of Orders
2
25. Consider the following Data: Territory Potential: Rs 10,000,000: Number Of Leads Per Proposal: 10; Average Sales Size: Rs $50,000 \&$ Average Closing Ratio: $25 \%$. Now your Territory Manager proposes a Target Quota of Rs $350000 \&$ asked you being the Assistant territory Manager to recommend whether the target Quota is achievable or not. What will be your recommended decision?
O. Yes go ahead with Target Quota based on given datab. Feasible but hard to achieve based on given datac. If the target is 3 lakhs then feasible based on given datad. target quota not feasible \& better to slash it down by 1 lakh based on given data

|  | ROLL | NAME | Quiz 1 Marks (Full Marks: 10 ) |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | PC EE-401 | PC EE-402 | PC EE-403 | HM EE-401 | ES EE-401 | MC EE-401 |
|  |  |  | EM-1 (IK/CS) | DE (JR) | EEM (MRC/AD) | VEP (SG) | TPE (BDG/PB) | ES (MHR) |
| 1 | 11901619006 | Pradhium Mukhia | AB | 10 | AB | 10 | AB | 6 |
| 2 | 11901619007 | Isha Paswan | 10 | 10 | 10 | 9 | 10 | 10 |
| 3 | 11901619008 | Benedick Minj | AB | 10 | 4 | 10 | AB | 6 |
| 4 | 11901619009 | Ramji Chettri | AB | 10 | AB | 9 | AB | 6 |
| 5 | 11901619010 | Suraj Singh | 10 | 9 | 8 | 10 | 10 | 10 |
| 6 | 11901619011 | Soumyajyoti kar | AB | 10 | 9 | 10 | 10 | 6 |
| 7 | 11901619012 | Subhrajyoti Paul | AB | 10 | 9 | 8 | AB | 6 |
| 8 | 11901619013 | Bhaskar Barman | 9 | 10 | AB | 10 | 8 | 6 |
| 9 | 11901619014 | Toohin Hansda | AB | 10 | AB | 9 | AB | 6 |
| 10 | 11901619015 | Abhisekh poddar | AB | 10 | AB | AB | AB | 8 |
| 11 | 11901619016 | Anirban Roy | 10 | 10 | 10 | 10 | 10 | 10 |
| 12 | 11901619017 | Danish Das | 10 | 10 | 8 | 10 | 10 | 10 |
| 13 | 11901619018 | Sayan Roy | AB | 10 | AB | 10 | AB | 6 |
| 14 | 11901619019 | Sayan Malakar | 10 | 10 | 10 | 9 | 10 | 10 |
| 15 | 11901619020 | Sayan Choudhury | 8 | 10 | 9 | AB | 10 | 10 |
| 16 | 11901619021 | Sayan kundu | 7 | 10 | 10 | 10 | 10 | 10 |
| 17 | 11901619022 | Sayan Bhowmick | 10 | 10 | 8 | 10 | 10 | 10 |
| 18 | 11901619023 | Divya Bramha | 10 | 10 | 10 | 10 | 10 | 10 |
| 19 | 11901620013 | Debashis Roy | 10 | 10 | 10 | 9 | 10 | 10 |
| 20 | 11901620014 | Anshuman Ray | 10 | 10 | 8 | 9 | 8 | 10 |
| 21 | 11901620015 | Sourav Das | 10 | 10 | 10 | AB | 10 | 10 |
| 22 | 11901620016 | Naman Allay | 4 | 10 | AB | AB | 10 | 10 |
| 23 | 11901620017 | Rakesh Chandra Sutradhar | 10 | 10 | 10 | 8 | 10 | 7 |
| 24 | 11901620018 | Pratik Chakraborty | AB | 10 | AB | 10 | AB | 7 |
| 25 | 11901620019 | Ratna Tshering Lepcha | 10 | 10 | 9 | 9 | 10 | 10 |
| 26 | 11901620020 | Bishnu Roy | 10 | 10 | 10 | 9 | 10 | 10 |
| 27 | 11901620021 | Hrisikesh Roy | AB | 10 | AB | 9 | AB | 6 |
| 28 | 11901620022 | Rakhiparna Roy | 10 | 10 | 9 | 8 | 10 | 10 |
| 29 | 11901620023 | Bornisha Roy | 10 | 10 | 10 | 10 | 6 | 10 |
| 30 | 11901620024 | DEWASIS PRADHAN | 10 | 10 | 10 | 9 | 6 | 10 |
| 31 | 11901620025 | RAHUL BANIK | 10 | 10 | 9 | AB | 10 | 10 |
| 32 | 11901620026 | Surajit Mandal | 10 | 8 | 10 | 8 | 10 | 10 |
| 33 | 11901620027 | Mujahid Alam | 10 | 9 | 9 | 7 | 10 | 10 |
| 34 | 11901620028 | Anima Sen | 10 | 10 | 9 | 10 | 10 | 10 |
| 35 | 11901620029 | Utpal Roy | 10 | 9 | 10 | 7 | 8 | 10 |
| 36 | 11901620030 | SRIJON GHOSH | 10 | 10 | 10 | 10 | 10 | 10 |
| 37 | 11901620031 | KOUSHIKSOME | 10 | 9 | 10 | 9 | 10 | 10 |
| 38 | 11901620032 | Samaeeta Bhowmik | 10 | 10 | 9 | 10 | 10 | 10 |
| 39 | 11901620033 | Sagar Roy | 8 | 10 | 10 | 9 | 10 | 10 |
| 40 | 11901620034 | Souvik Sarkar | 10 | 10 | 10 | 10 | AB | 8 |
| 41 | 11901620035 | Bappa Saha | 10 | 10 | 9 | AB | 10 | 10 |
| 42 | 11901620036 | Deeptansu Ghosh | 10 | 10 | 10 | 10 | 8 | 6 |
| 43 | 11901620037 | Deepshikha Howladar | 10 | 9 | 10 | 7 | 10 | 6 |


| 44 | 11901620038 | Pranav Kumar Sarkar | 10 | 10 | 10 | 7 | 10 | 10 |
| :--- | :--- | :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| 45 | 11901620039 | Subha Sarkar | 10 | 9 | 10 | 10 | AB | 10 |
| 46 | 11901620040 | Abinash Chetteri | 10 | 10 | 9 | 3 | 10 | 10 |

