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Note : Remove “Table of Content” before including in CP Book
Each Course Plan shall be printed and made into a book with cover page
Blooms Level in all sections match with A.2, only if you plan to teach / learn at higher levels

17CS51 : Management and Entrepreneurship

A. COURSE INFORMATION

1. Course Overview

Degree:	B.E	Program:	
Year / Semester :	3Y/5S	Academic Year:	2018-19

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Course Title:	Management and Entrepreneurship	Course Code:	17CS51
Credit / L-T-P:		SEE Duration:	180 Minutes
Total Contact Hours:	50	SEE Marks:	80 Marks
CIA Marks:	20	Assignment	1 / Module
Course Plan Author:	LOKESH HD	Sign	Dt:
Checked By:		Sign	Dt:

2. Course Content

Module	Module Content	Teaching Hours	Module Concepts	Blooms Level
1	Management meaning characteristics, scope goals, levels of management , Evaluation , planning importance , types , steps of plan organization staffing	10	Meaning goal level of management planning staffing	L2 understanding
2	Directing & controlling nature. Leadership styles motivation communication, co-ordination importance controlling meaning steps methods of establishing control	10	Direction communication co-ordination control	L3 apply
3	Entrepreneurship meaning characteristics,classification types stages,roles Barrires to entrepreneurship identification of business market,technical financial & social feasibility study	10	Entrepreneurship types &roles Barriers to entrepreneur feasibility	L2 understanding L3 apply
4	Preparation of project & entrepreneur meaning identification selection,report need ,contents entrepreneur: functional areas marketing *sales. SCM,F*A HR types & methods of report	10	Project & report ERP SCM HR	L4 analysis L5 evaluate
5	Micro & small Enterprises characteristics adv. Steps govt of India Industrial policy case study (Microsoft) Institutional support: MSME-DI, NSIC, SIDBI KIADB, KSSIDC, TECSOK KSFC ,DIC introduction to IPR	10	Micro& small enterprise govt Institutions to small industry	L3 apply L5 evaluate

3. Course Material

Module	Details	Available
1	Text books	
	Principles of management -P.C Tripathi, P.N.Reddy; Tata McGraw Hill, 4th/6th Edition,2010.	In college Lib
2	Reference books- Entrepreneurship Development- S S khanka -S Chand & Co.	In college dept
3	Others (Web, Video, Simulation, Notes etc.)	Not Available

4. Course Prerequisites

SNo	Course Code	Course Name	Module / Topic / Description	Sem	Remarks	Blooms Level
1	CS102	management	1. Knowledge of management	5		
	-	-	4. Knowledge of entrepreneurship	-	Plan Gap Course	

Note: If prerequisites are not taught earlier, GAP in curriculum needs to be addressed. Include in Remarks and implement in B.5.

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B. OBE PARAMETERS

1. Course Outcomes

#	COs	Teach. Hours	Concept	Instr Method	Assessment Method	Blooms' Level
17CS51.1	Understand,themeaning characteristic scope of management & levels also	04	Management meaning goal&levels	Lecture Demo	Define	L2 understanding
17CS51.2	Have the knowledge of planning to achieve the objectives of organization & staffing	06	Planning & staffing	Lecture Demo	Limtted Answers	L2 understanding
17CS51.3	Learn how to direct & control the staff & motivate staff & communication	05	Direction & communication	Lecture Demo	Presentation	L3 Apply
17CS51.4	Co-ordination and control all the levels of management	05	Co-ordination & control	Class room Demo	Assignment question tests	L3 Apply
17CS51.5	Learn what is an entrepreneur adopt the characterestics, role and types of an entrepreneur	06	Types of entrepreneur roles	Class room demo	Test answers	L2 understanding
17CS51.6	Find the different types of business and various types of feasibility study	04	Barriers to entrepreneur feasibility study	Class room demo	Student presentation	L3 Apply
17CS51.7	Identify project prepare the project location finding the finance for project	05	Project & report generation	Case study	Video student demo group discusion	L4 analysis
17CS51.8	Find what are the resources of an enterprise & how to make use of them like men, machine, method, money	05	ERP SCM HR finance	Group discusion debates	Evaluate student presentation	L5 evaluate
17CS51.9	Understand what are small & micro enterprises & how the govt will support to start small enterprises	03	Micro & small enterprises	Test problems case studies	Question to solve	L3 Apply
17CS51.10	What are the govt support institutions to provide facility to people learn & start their own enterprise	07	Govt institutions related to small industry	Case study group discussion	Student presentation	L5 evaluate
-	**Total**	**62**	-	-	-	-

Note: Identify a max of 2 Concepts per Module. Write 1 CO per concept.

2. Course Applications

SNo	Application Area	CO	Level
1	Understand characteristics and scope of management	CO1	L2
2	Learn the principles and, goals of management	CO2	L2
3	Identify the levels of management	CO3	L2
4	Learn the types of direction	CO4	L3
5	What are the various controlling methods	CO5	L2
6	Apply characteristics of entrepreneurship	CO6	L2
7	Evaluate project plan and report	CO7	L3
8	Apply business opportunity methods	CO8	L2

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9	Able to differentiate micro and small industries	CO9	L2
10	Able to understand financial institution	CO10	L4

Note: Write 1 or 2 applications per CO.

3. Articulation Matrix

(CO – PO MAPPING)

-	Course Outcomes	Program Outcomes												
#	COs	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	Level
CS501PC.1	Understand characteristics and scope of management		3	2	2	2	3	3	3	2	3	3	2	L2
CS501PC.2	Learn the principles and, goals of manag-ement	2	3	2	1	1	2	2	3	2	3	2	2	L2
CS501PC.3	Identify the levels of management	2	3	2	1	1	2	2	3	2	3	2	2	L2
CS501PC.4	Learn the types of direction	2	3	3	2	2	2	3	3	3	3	2	2	L3
CS501PC.5	What are the various controlling methods	3	3	3	2	2	2	2	2	2	2	2	2	L2
CS501PC.6	Apply characteristics of entre-preneurship	3	3	3	3	2	2	1	2	2	2	2	2	L2
CS501PC.7	Evaluate project plan and report	3	3	2	3	3	2	2	3	3	2	2	2	L3
CS501PC.8	Apply business opportunity methods	2	2	3	3	3	3	3	2	2	2	2	2	L2
CS501PC.9	Able to differentiate micro and small industries	3	3	3	3	3	3	3	3	2	2	3	2	L2
CS501PC.														
Note: Mention the mapping strength as 1, 2, or 3														

Method 1
hour method

#	Level	Hrs	CO-att	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	
17CS51.1	L2	04			3	2	2	2	3	3	3	2	3	3	2	
17CS51.2	L2	06		2	3	2	1	1	2	2	3	2	3	2	2	
17CS51.3	L2	05		2	3	2	1	1	2	2	3	2	3	2	2	
17CS51.4	L3	05		2	3	3	2	2	2	3	3	3	3	2	2	
17CS51.5	L2	06		3	3	3	2	2	2	2	2	2	2	2	2	
17CS51.6	L2	04		3	3	3	3	2	2	1	2	2	2	2	2	
17CS51.7	L3	05		3	3	2	3	3	2	2	3	3	2	2	2	
17CS51.8	L2	05		2	2	3	3	3	3	3	2	2	2	2	2	
17CS51.9	L2	03		3	3	3	3	3	3	3	3	2	2	3	2	
sum		50		**40**	**40**	**28**	**19**	**22**	**11**	**0**	**12**	**40**	**15**	**40**	**35**	
avg			**-**	**80**	**80**	**56**	**38**	**44**	**22**	**0**	**24**	**80**	**30**	**80**	**70**	
level				**3**	**3**	**3**	**2**	**3**	**2**		**2**	**3**	**2**	**3**	**3**	
	Note: Mention the mapping strength as 1, 2, or 3															

hour method

#	Level	Hrs	CO-att	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	
15CS754.1	L2	3	2.75	3	3	3			2			3	2	3	3	
15CS754.2	L3	5	2.875	3	3	3		3	2			3		3	3	
15CS754.3	L3	3	2.6666666667	3	3	3	2		2			3	2	3	3	
15CS75	L2	5	2.857	3	3	3		3				3	2	3		

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4.4			1428571													
15CS754.5	L4	4	2.77777778	3	3	3	2	3				3	2	3	3	
15CS754.6	L2	4	3	3	3	3		3				3		3	3	
15CS754.7	L2	8	2.375	3	3		2				2	3	0	3	3	
15CS754.8	L4	4	2.714285714 3	3	3		2				2	3		3	3	
15CS754.9	L3	4	3	3	3	3	-	3	-	-	-	3	-	3	3	
sum		50		**27**	**27**	**21**	**8**	**15**	**6**	**0**	**4**	**27**	**8**	**27**	**24**	
avg			**2.7**	**3**	**3**	**3**	**2**	**3**	**2**		**2**	**3**	**1.6**	**3**	**3**	
	Note: Mention the mapping strength as 1, 2, or 3															

Method 2
level method

#	Level	Hrs	CO-att	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	
15CS754.1	L2	3	1	1	1	1			1			1	1	1	1	
15CS754.2	L3	5	2	2	2	2		2	2			2		2	2	
15CS754.3	L3	3	2	2	2	2	2		2			2	2	2	2	
15CS754.4	L2	5	1	1	1	1		1				1	1	1		
15CS754.5	L4	4	2	2	2	2	2	2				2	2	2	2	
15CS754.6	L2	4	1	1	1	1		1				1		1	1	
15CS754.7	L2	8	0.875	1	1		1				1	1	0	1	1	
15CS754.8	L4	4	2	2	2		2				2	2		2	2	
15CS754.9	L3	4	2	2	2	2	-	2	-	-	-	2	-	2	2	
sum		50	9	**14**	**14**	**11**	**7**	**8**	**5**	**0**	**3**	**14**	**6**	**14**	**13**	
avg			1.5	**1.5**	**1.5**	**1.2**	**1**	**1**	**1**	**0**	**1**	**1.5**	**1**	**1.5**	**1.4**	
	Note: Mention the mapping strength as 1, 2, or 3															

Combined method

parameters	Level	Hrs	CO-att	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
hours	L2-l4	50	**2.7**	**3**	**3**	**3**	**2**	**3**	**2**		**2**	**3**	**1.6**	**3**	**3**
levels	L2-l4	50	**1.5**	**1.5**	**1.5**	**1.2**	**1**	**1**	**1**	**0**	**1**	**1.5**	**1**	**1.5**	**1.4**
Cours	L2-	50	**2.1**	**2.25**	**2.25**	**2.1**	**1.5**	**2**	**1.5**	**0**	**1.5**	**2.25**	**1.3**	**2.2**	**2.2**

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e avg	l4														

Method

#	Level	Hrs	CO-att	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	
15CS754.1	L2	3	2	2.2	2.2	2.1			1.5			2.2	**1.3**	1	1	
15CS754.2	L3	5	2.0	2.2	2.2	2.1		2	1.5			2.2		2	2	
15CS754.3	L3	3	2	2.2	2.2	2.1	1.5		1.5			2.2	**1.3**	2	2	
15CS754.4	L2	5	2	2.2	2.2	2.1	1.5	2				2.2	**1.3**	1		
15CS754.5	L4	4	2	2.2	2.2	2.1	1.5	2				2.2	**1.3**	2	2	
15CS754.6	L2	4	2.15	2.2	2.2	2.1		2				2.2		1	1	
15CS754.7	L2	8	2	2.2	2.2		1.5				1.5	2.2	0	1	1	
15CS754.8	L4	4	12	2.2	2.2		1.5				1.5	2.2.2		2	2	
15CS754.9	L3	4	2.1	2.2	2.2	2.1	-	2	-	-	-	2	-	2	2	
Course avg	L2-L4	5	**2.1**	**2.2**	**2.2**	**2.1**	**1.5**	**2**	**1.5**	**0**	**1.5**	**2.175**	**1.04**	**1.5**	**1.4**	
		Note: Mention the mapping strength as 1, 2, or 3														

4. Mapping Justification

Mapping		Justification	Mapping Level
CO	**PO**	**-**	**-**
CO1	PO1	Analysing the concept is not required. no mapping	L1
CO1	PO2	Knowledge of various management functions and involves levels of management and principles, characteristics and scope of management	L3
CO1	PO3	Objectives and evolution of management	
CO1	PO4	Supervising the various levels of planning and direction	
CO1	PO5	Controlling and leadership qualities	
CO1	PO6	Management is a social science hence helps to apply basic management principles to societal problems	
CO1	PO7	Formal and informal organization and its principles	
CO1	PO8	Line and staff organization	
CO1	PO9	Committee and matrix organization	
CO1	PO10	Financial institutional support for startups	
CO1	PO11	Apply management principles in a team work and to manage projects	
CO1	PO12	Able to differentiate micro and small industries	
CO2	PO1	Clear channel of communication with no confusion	
CO2	PO2	Capable of developing the all round executive at the higher level	
CO2	PO3	Strong in discipline as it fixes responsibility of an individual	
CO2	PO4	It is a logical reflection of functions	
CO2	PO5	It facilitate mass production, through specialization and	

		standardization	
CO2	PO6	Management is a social science hence helps to apply basic management principles to societal problems	
CO2	PO7	Economic growth of company difficult	
CO2	PO8	This helps to understand the managerial ethical principles that has to be followed while monitoring a project	
CO2	PO9	This enhances the leadership quality of students before entering into team works	
CO2	PO10	Limits development of general managers.	
CO2	PO11	Functional authority of line departments	
CO2	PO12	Management principles are flexible and adaptable and hence it can be used and applied in the future course of action	
CO3	PO1	Decisions are general widely accepted science they are taken in a democratic process	
CO3	PO2	it ensures effective utilization of available resources	
CO3	PO3	It ensures the achievement of objectives with technical specialization	
CO3	PO4	Top management is re-leaved of operational task on common goals	
CO3	PO5	Maintenance power and prestige of major functions	
CO3	PO6	Provides means of right control at top	
CO3	PO7	Expensive capital equipment's can be batter utilized	
CO3	PO8	Places emphasis on local problems and market	
CO3	PO9	This enhances the leadership quality of students before entering into team works	
CO3	PO10	Co-ordinates the efforts of the departments which are represented	
CO3	PO11	Apply management principles in a team work and to manage projects	
CO3	PO12	Management principles are flexible and adaptable and hence it can be used and applied in the future course of action	
CO4	PO1	Provides the opportunities for pooling of ideas group judgment	
CO4	PO2	Helps in achieving optimum decisions	
CO4	PO3	Its supplies the details available in organization manual	
CO4	PO4	Holding of people responsible for accomplishment tasks	
CO4	PO5	Determination of results expected	
CO4	PO6	Management is a social science hence helps to apply basic management principles to societal problems	
CO4	PO7	Amount of personal contact needed	
CO4	PO8	This helps to understand the managerial ethical principles that has to be followed while monitoring a project	
CO4	PO9	This enhances the leadership quality of students before entering into team works	
CO4	PO10	It provides a basis for planning for development of policies	
CO4	PO11	Apply management principles in a team work and to manage projects	
CO4	PO12	Management principles are flexible and adaptable and hence it can be used and applied in the future course of action	
CO5	PO1	Co-ordinates efforts of various departments of an organization	
CO5	PO2	It helps discovering talented and competent workers	
CO5	PO3	Providing necessary training for the people to carry out the job	
CO5	PO4	Direction is the interpersonal aspect of managing by which subordinates or able to understand and contribute effectively	
CO5	PO5	Issuing of orders leading and motivation of subordinates	
CO5	PO6	Management is a social science hence helps to apply basic management principles to societal problems	
CO5	PO7	Leadership is in important aspect of managing	
CO5	PO8	Leadership is the ability to secure desirable actions from a group	

CO5	PO9	This enhances the leadership quality of students before entering into team works	
CO5	PO10	Communication is the process of transmitting ideas from 1:1	
CO5	PO11	Apply management principles in a team work and to manage projects	
CO5	PO12	Management principles are flexible and adaptable and hence it can be used and applied in the future course of action	
CO6	PO1	An entrepreneur is one who always searches for changes, responds to it and exploits it as on opportunity	
CO6	PO2	Entrepreneur is a trait possessed by an entrepreneur	
CO6	PO3	Introduction of new product and methods	
CO6	PO4	Development of new markets and find fresh sources of raw materials	
CO6	PO5	Should have unwavering determination and commitment	
CO6	PO6	Accepts responsibilities with enthusiasm	
CO6	PO7	Both think or planner and worker	
CO6	PO8	Future vision intelligent, imaginative and self directed	
CO6	PO9	Qualities of an entrepreneur like success and achievement	
CO6	PO10	Functions of an entrepreneur for developing countries	
CO6	PO11	Primary functions like planning, organizing management and innovation	
CO6	PO12	Other functions like diversification of production	
CO7	PO1	Co-ordination with outside agencies	
CO7	PO2	Selection of product line and location of plant	
CO7	PO3	Deciding the type of business organization	
CO7	PO4	Preparation of budget and identifying capital sources	
CO7	PO5	Studying the government rules and regulations	
CO7	PO6	Studying and selection of marketing resources	
CO7	PO7	Types of entrepreneur according to the type of bussiness	
CO7	PO8	Types of entrepreneur according to technology	
CO7	PO9	Types of entrepreneur according to motivation	
CO7	PO10	Types of entrepreneur according to growth	
CO7	PO11	Types of entrepreneur according to the stages of development	
CO7	PO12	Types of entrepreneur according to area	
CO8	PO1	Types of entrepreneur according to age and gender	
CO8	PO2	Types of entrepreneur according to scale of operations	
CO8	PO3	Professional and non professional entrepreneur	
CO8	PO4	National and international entrepreneur	
CO8	PO5	Skilled and unskilled entrepreneur	
CO8	PO6	Modern and traditional entrepreneur	
CO8	PO7	Forced and inherited entrepreneur	
CO8	PO8	Intrapreneur elements like innovations, self renewal	
CO8	PO9	Characteristics of entrepreneur	
CO8	PO10	Innovation, risk taking, skilled, organizing and decision making	
CO8	PO11	Stages in entrepreneur proces	
CO8	PO12	Identification of opportunity	
CO9	PO1	Evaluation of the opportunity	
CO9	PO2	Preparation of the business plan	
CO9	PO3	Determination and organizing the resources	
CO9	PO4	Managing the enterprise	
CO9	PO5	Evaluation of entrepreneur	
CO9	PO6	Entrepreneur in india	
CO9	PO7	Barriers of entrepreneurship	
CO9	PO8	Woman entrepreneur	
CO9	PO9	Functions of an woman entrepreneur	

CO9	PO10	Exploration of the prospects of the new business	
CO9	PO11	Pool up the resources	
CO9	PO12	Establish the industrial enterprise	

Note: Write justification for each CO-PO mapping.

5. Curricular Gap and Content

SNo	Gap Topic	Actions Planned	Schedule Planned	Resources Person	PO Mapping
1					
2					
3					
4					
5					

Note: Write Gap topics from A.4 and add others also.

6. Content Beyond Syllabus

SNo	Gap Topic	Actions Planned	Schedule Planned	Resources Person	PO Mapping
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					

Note: Anything not covered above is included here.

C. COURSE ASSESSMENT

1. Course Coverage

Module #	Title	Teaching Hours	No. of question in Exam						CO	Levels
			CIA-1	CIA-2	CIA-3	Asg	Extra Asg	SEE		
1	Management	16	2	-	-	1	1	2	CO1, CO2	L1, L2
2	Direction and controlling	13	2	-	-	1	1	2	CO3, CO4	L2, L3
3	Entrepreneurship	9	-	2	-	1	1	2	CO5, CO6	L3, L4
4	Project plan and Reporting	10	-	2	-	1	1	2	CO7, C08	L2, L3
5	Micro and small industries	14	-	-	4	1	1	2	CO9, CO10	L4, L5
-	**Total**	**62**	**4**	**4**	**4**	**5**	**5**	**10**	**-**	**-**

Note: Distinct assignment for each student. 1 Assignment per chapter per student. 1 seminar per test per student.

2. Continuous Internal Assessment (CIA)

Evaluation	Weightage in Marks	CO	Levels
CIA Exam – 1	30	CO1, CO2, CO3, CO4	L2, l3, l4, l2
CIA Exam – 2	30	CO5, CO6, CO7, C08	L1, L2, L3, L4
CIA Exam – 3	30	CO9, CO10	L3, L1
Assignment - 1	05	CO1, CO2, CO3, CO4	L2, L3, L4, L3
Assignment - 2	05	CO5, CO6, CO7, CO8	L1, L2, L3, L1
Assignment - 3	05	CO9, CO10	L3, L4
Seminar - 1	05	CO1, CO2, CO3, CO4	L2, L3, L4, L3
Seminar - 2	05	CO5, CO6,CO7,CO8	L1, L2, L3, L1
Seminar - 3	05	CO9, CO10	L3, L4
Other Activities – define – Slip test		CO1 to Co9	L2, L3, L4 . ..
Final CIA Marks	**40**	**-**	**-**

Note : Blooms Level in last column shall match with A.2 above.

D1. TEACHING PLAN - 1

Module - 1

Title:	Management	Appr Time:	16 Hrs
a	***Course Outcomes***	-	**Blooms**
-	The student should be able to:	-	**Level**
1	Evaluate scope, goals of management	CO1	L2
2	Understand principles and levels of management	CO2	L3
b	***Course Schedule***	-	-
Class No	**Module Content Covered**	**CO**	**Level**
1	Introduction to Subject, course objectives and outcomes	C01	L2
2	Definition of management		
3	Characteristics		
4	Scope and goals		
5	Principles of management		
6	Levels of management		
7	Business opportunity		
8	Feasibility study		
9	Marketing and technical feasibility		
10	Entrepreneurship		
11	Characteristics of entrepreneurship		
12	Evolution of entrepreneurship		
13	Barriers of entrepreneurship		
14	Need for EDP		
15	Project plan report		
16	Small and micro industries		
c	**Application Areas**	**CO**	**Level**
1	Use to find principles and levels of management	CO1	L3
2	Used in plan and feasibility study	CO2	L4
d	**Review Questions**	-	-
1	Discuss various levels of management	CO1	L1
2	Discuss principles and characteristics of management	CO1	L3

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3	Explain as a science ,art or profession	CO2	L2
4	Write and explain difference between administration and management	CO2	L4
5	Illustrate business opportunities	CO2	L2
6	Describe feasibility study	CO2	L5
7	Discuss the entrepreneurship	CO2	L2
8	Mention types of entrepreneurship	CO2	L3
9	Identify types of plans rports	CO2	L4
10	List the various micro and small industries	CO1	L1
11	Describe case study about Narayanamurthy of Infosys	CO1	L4
e	**Experiences**	-	-
1		CO1	L2
2			
3			
4		CO3	L3
5			

Module – 2

Title:	Directing and control	Appr Time:	10 Hrs
a	***Course Outcomes***	-	**Blooms**
-	The student should be able to:	-	**Level**
1	Evaluate directing procedure	CO3	L4
2	Understand controlling methods	CO4	L3
b	***Course Schedule***	-	-
Class No	**Module Content Covered**	**CO**	**Level**
17	Introduction to Subject, course objectives and outcomes		
18	Management		
19	Definition Characteristics		
20	Principles of direction		
21	Leadership and approaches		
22	Motivation positive and negative		
23	Behaviour and goals		
24	Steps in control		
25	Essentials of a sound control system		
26	Methods of establishing control		
c	**Application Areas**	**CO**	**Level**
1	Use to find principles and levels of management	CO3	L3
2	Used in plan and feasibility study	CO4	L4
d	**Review Questions**	-	-
12	Definition Characteristics	CO3	L1
13	Principles of direction	CO4	L3
14	Leadership and approaches	CO3	L2
15	Motivation positive and negative	CO4	L4
16	Behaviour and goals	CO4	L2
17	Steps in control	CO3	L5
18	Essentials of a sound control system	CO3	L2
19	Methods of establishing control	CO3	L3
e	**Experiences**	-	-
1		CO1	L2

2			
3			
4		CO3	L3
5			

E1. CIA EXAM – 1

a. Model Question Paper - 1

Crs Code:	CS501PC	Sem:	I	Marks:	30	Time:	75 minutes		
Course:	Management and entrepreneurship								
-	**-**	**Note: Answer any 3 questions, each carry equal marks.**					**Marks**	**CO**	**Level**
1	a	Define explain nature of management					20	CO1	L1
	b	What are scope and characteristics of management							L2
	c	Discuss planning procedures						CO2	L3
	d	Describe business opportunities							L1
2	a	Discuss principles of direction					20		L2
	b	Describe leadership and motivation							L4
	c	Differentiate various communication systems							L3
	d	Mention characteristics and importance of coordination							L2
3	a	What are classification and types of entrepreneurs					20	CO3	L1
	b	Discuss role of entrepreneurs in economic development						CO4	L2
	c	What the barriers of entrepreneurs							L1
	d	Evaluate various feasibility studies							L2
4	a	Describe the meaning of project ERP					20		L2
	b	Differentiate project identification, selection and report							L2
	c	Explain functional areas of management ex marketing/sales							L1
	d	Supply chain management – finance and accounting							L3

b. Assignment -1

Note: A distinct assignment to be assigned to each student.

Model Assignment Questions									
Crs Code:	CS501PC	Sem:	I	Marks:	5 / 10	Time:	90 – 120 minutes		
Course:	Management and Entrepreneurship								
Note: Each student to answer 2-3 assignments. Each assignment carries equal mark.									
SNo	**USN**	**Assignment Description**					**Marks**	**CO**	**Level**
1		Define management					5	CO1	L2
2		List and explain the functions of management					5	CO2	L3
3		Explain the scope of management						CO2	L4
4		Differentiate between administration and management					5	CO1	L3
5		Discuss role of management							
6		List different levels of management							
7		Discuss in brief the nature of management							
8		Explain early management approaches							
9		Explain the the modern management approaches							
10		What is planning ? Explain types of planning							
11		What is nature and purpose of planning							
12		Differentiate between strategic and tactical planning							

13		Explain the process of decision making			
14		Explain the nature and purpose of organization			
15		What are various types of organizations			
16		Explain functional organization			
17		What is departmentation . Explain its types			
18		What are committees? Explain the principles of committees			
19		Explain the process of delegation			
20		Differentiate between MBO & MBE			
21		Explain the nature and importance of staffing			
22		What are different types of interview techniques?			
23		Differentiate between recruitment and selection			
24		Explain meaning and nature of directing			
25		Define leadership & motivation			
26		Define communication. Explain different systems of communication.			
27		What is coordination and cooperation			
28		State and explain the steps in controlling			
29		Explain the methods of establishing sound controlling			
30		What is entrepreneurship and evolution of entrepreneurship			
31		What are the qualities and characteristics of entrepreneur			
32		What are the types and functions of entrepreneur			
33		Differentiate between entrepreneur intrapreneur & manager			
34		What are the various stages of entrepreneurship process			
35		Explain role of entrepreneur in economic development			
36		What are the barriers of entrepreneurs			
37		Discuss the concept of women entrepreneurs			
38		What are the problems faced by women entrepreneurs			
39		Explain the functions of ERP			
40		Describe the planning process and reporting			
41		Define smallscale industry ,ancillary and Tiny industry			
42		What are characteristics of SSI			
43		Explain objectives of SSI			
44		Explain role of SSI in economic development			
45					
46					
47					

D2. TEACHING PLAN - 2

Module – 3

Title:	Entrepreneurship	Appr Time:	16 Hrs
a	***Course Outcomes***	-	**Blooms**
-	The student should be able to:	-	**Level1**
1	Evaluate scope, goals of entrepreneur Understand principles of entrepreneur	CO5	L2
2		CO6	L3
b	***Course Schedule***		
Class No	**Module Content Covered**	**CO**	**Level**
1	Introduction to Subject, course objectives and outcomes	C6	
2	Entrepreneur		
3	Characteristics		
4	Evolution		
5	Qualities	C5	

6	Functions		
7	Types		
8	Meaning and role		
9	Role		
10	Difference between manager and Entrepreneur		
11	Concept		
12	Development		
13	Stages		
14	Economic development		
15	Barriers		
16	Women Entrepreneur		
c	**Application Areas**	**CO**	**Level**
1	Use to find performance of Entrepreneur	CO1	L3
2	Used levels of Entrepreneurship	CO2	L4
d	**Review Questions**	-	-
1	Explain model of **Entrepreneurship**	CO1	L1
2	Explain evolution of Entrepreneurship	CO1	L3
3	What are the qualities of Entrepreneur	CO2	L2
4	Explain functions of Entrepreneur	CO2	L4
5	What are types of Entrepreneur	CO2	L2
6	Discuss role of Entrepreneur	CO2	L5
7	What are elements of Entrepreneur	CO2	L2
8	Explai the development of Entrepreneurship	CO2	L3
9		CO2	L4
10		CO1	L1
11		CO1	L4
e	**Experiences**	-	-
1		CO1	L2
2			
3			
4		CO3	L3
5			

Module – 4

Title:	Planning and ERP	Appr Time:	16 Hrs
a	***Course Outcomes***	-	**Blooms**
-	The student should be able to:	-	**Level**
1	Should be able to understand importance of planning.	CO7	L2
2	Able to understand enterprise resource planning.	CO8	L3
b	***Course Schedule***		
Class No	**Module Content Covered**	**CO**	**Level**
1	Characteristics of management		
2	Objectives of management		
3	Functional areas of management		
4	Levels of management		
5	Importance of planning, purpose of planning and types of planning.		
6	Nature of organization and types of organization.		
7	Nature and importance of staffing		
8	Direction, leadership and controll.		

9	Characteristics of entrepreneurship		
10	Qualities of entrepreneurship		
11	Functions of entrepreneurship		
12	Types of entrepreneurship		
13	Meaning, identification and selection of projects		
14	Project formulation, appraisal.		
15	Characteristics, objectives and sciope of small scale industry		
16	Institutional support like SSIDC, DIC, NSIC, SIDO and IDBI		
c	**Application Areas**	**CO**	**Level**
1	Use to find nature, functions and roles of management	CO8	L3
2	Used in levels of management	CO7	L4
d	**Review Questions**	-	-
1	Discuss the various levels and modern method of management	CO7	L1
2	Discuss the importance, purpose and types of planning.	CO7	L3
3	Explain nature of organization, importance of staffing, meaning of direction and steps in controll.	CO8	L2
4	Write and explain qualities, characteristics, functions and types of entrepreneurship	CO7	L4
5	Illustrate various institutions for supporting SSI and micro industries	CO8	L2
6	Describe the functions of entrepreneurship	CO8	L5
7	Illustrate the types of entrepreneurship		L2
8	Define Meaning, identification and selection of projects		L3
9	Explain Project formulation, appraisal.		L4
10	What are Characteristics, objectives and sciope of small scale industry		L1
11	How useful the Institutional support like SSIDC, DIC, NSIC, SIDO and IDBI		L4
e	**Experiences**	-	-
1		CO7	L2
2			
3			
4		CO8	L3
5			

E2. CIA EXAM – 2

a. Model Question Paper - 2

Crs Code:	CS501PC	Sem:	5	Marks:	30	Time:	75 minutes
Course:	Management and Entrepreneurship						

-	-	**Note: Answer any 2 questions, each carry equal marks.**	**Marks**	**CO**	**Level**
1	a	Define explain nature of management	20	CO1	L2
	b	What are scope and characteristics of management			L3
	c	Discuss planning procedures		CO2	L3
	d	Describe business opportunities			L3
2	a	Discuss principles of direction	20		L2
	b	Describe leadership and motivation			L3
	c	Differentiate various communication systems			L3
	d	Mention characteristics and importance of coordination			L2
3	a	What are classification and types of entrepreneurs	20	CO3	L3
	b	Discuss role of entrepreneurs in economic development		CO4	L2
	c	What the barriers of entrepreneurs			L1
	d	Evaluate various feasibility studies			L2

4	a	Describe the meaning of project ERP	20		L2
	b	Differentiate project identification, selection and report			L2
	c	Explain functional areas of management ex marketing/sales			L3
	d	Supply chain management – finance and accounting			L4

b. Assignment – 2

Note: A distinct assignment to be assigned to each student.

Model Assignment Questions							
Crs Code:	CS501PC	Sem:	5	Marks:	5 / 10	Time:	90 – 120 minutes
Course:	Management and Entrepreneurship						
Note: Each student to answer 2-3 assignments. Each assignment carries equal mark.							

SNo	USN	Assignment Description	Marks	CO	Level
1		Define management	5	CO1	L1
2		List and explain the functions of management	5	CO2	L2
3		Explain the scope of management		CO3	L3
4		Differentiate between administration and management	5	CO4	L4
5		Discuss role of management		CO5	L4
6		List different levels of management		CO6	L4
7		Discuss in brief the nature of management		CO7	L4
8		Explain early management approaches		CO8	L4
9		Explain the the modern management approaches		CO9	L4
10		What is planning ? Explain types of planning		CO10	L6
11		What is nature and purpose of planning		CO11	L7
12		Differentiate between strategic and tactical planning		CO12	L7
13		Explain the process of decision making		CO13	L6
14		Explain the nature and purpose of organization		CO14	L7
15		What are various types of organizations		CO15	L8
16		Explain functional organization		CO16	L8
17		What is departmentation . Explain its types		CO17	L8
18		What are committees? Explain the principles of committees		CO18	L8
19		Explain the process of delegation		CO19	L9
20		Differentiate between MBO & MBE		CO20	L9
21		Explain the nature and importance of staffing		CO3	L4
22		What are different types of interview techniques?		CO4	L4
23		Differentiate between recruitment and selection		CO5	L4
24		Explain meaning and nature of directing		CO6	L4
25		Define leadership & motivation		CO6	L4
26		Define communication. Explain different systems of communication.		CO6	L4
27		What is coordination and cooperation		CO4	L4
28		State and explain the steps in controlling		CO4	L4
29		Explain the methods of establishing sound controlling			
30		What is entrepreneurship and evolution of entrepreneurship		CO4	L4
31		What are the qualities and characteristics of entrepreneur		CO4	L4
32		What are the types and functions of entrepreneur		CO5	L4
33		Differentiate between entrepreneur intrapreneur & manager		CO5	L4
34		What are the various stages of entrepreneurship process		CO5	L4
35		Explain role of entrepreneur in economic development		CO7	L4
36		What are the barriers of entrepreneurs		CO7	L4
37		Discuss the concept of women entrepreneurs		CO7	L4
38		What are the problems faced by women entrepreneurs		CO8	L4
39		Explain the functions of ERP		CO8	L4
40		Describe the planning process and reporting		CO4	L4
41		Define smallscale industry ,ancillary and Tiny industry		CO9	L4

42		What are characteristics of SSI		CO9	L4
43		Explain objectives of SSI		CO10	L4
44		Explain role of SSI in economic development		CO10	L4
45		What are the qualities and characteristics of entrepreneur		CO4	L4
46		What are the types and functions of entrepreneur		CO4	L4
47		Differentiate between entrepreneur intrapreneur & manager		CO4	L4

D3. TEACHING PLAN - 3

Module – 5

Title:	Micro and small industry	Appr Time:	16 Hrs
a	***Course Outcomes***	-	**Blooms**
-	The student should be able to:	-	**Level**
1	Evaluate areas, roles and levels of management.	CO9	L2
2	Understand planning, organizing, staffing, direction and controlling.	CO10	L3
b	***Course Schedule***		
Class No	**Module Content Covered**	**CO**	**Level**
1	Characteristics of management		
2	Objectives of management		
3	Functional areas of management		
4	Levels of management		
5	Importance of planning, purpose of planning and types of planning.		
6	Nature of organization and types of organization.		
7	Nature and importance of staffing		
8	Direction, leadership and controll.		
9	Characteristics of entrepreneurship		
10	Qualities of entrepreneurship		
11	Functions of entrepreneurship		
12	Types of entrepreneurship		
13	Meaning, identification and selection of projects		
14	Project formulation, appraisal.		
15	Characteristics, objectives and sciope of small scale industry		
16	Institutional support like SSIDC, DIC, NSIC, SIDO and IDBI		
c	**Application Areas**	**CO**	**Level**
1	Use to find nature, functions and roles of management	CO10	L3
2	Used in levels of management	CO9	L4
d	**Review Questions**	-	-
1	Discuss the various levels and modern method of management	CO10	L1
2	Discuss the importance, purpose and types of planning.	CO10	L3
3	Explain nature of organization, importance of staffing, meaning of direction and steps in controll.	CO9	L2
4	Write and explain qualities, characteristics, functions and types of entrepreneurship	CO9	L4
5	Illustrate various institutions for supporting SSI and micro industries		L2
6	Describe the functions of entrepreneurship		L5
7	Illustrate the types of entrepreneurship		L2
8	Define Meaning, identification and selection of projects		L3
9	Explain Project formulation, appraisal.		L4
10	What are Characteristics, objectives and sciope of small scale industry		L1
11	How useful the Institutional support like SSIDC, DIC, NSIC, SIDO and IDBI		L4

e	Experiences	-	-
1		CO10	L2
2			
3			
4		CO9	L3
5			

E3. CIA EXAM – 3

a. Model Question Paper - 3

Crs Code:	CS501PC	Sem:	5	Marks:	30	Time:	75 minutes
Course:	Management and Entrepreneurship						

-	-	Note: Answer any 2 questions, each carry equal marks.	Marks	CO	Level
1	a	What is order of growth of an algorithm?	20	CO9	L1
	b	Give formal definition of Worst case and Average case efficiencies			L2
	c	Solve the recurrence relation for the time complexity: T(n) = 2 If n=2 T(n) = 2T (n/2) + 3 * n If n2		CO9	L3
	d	Define order of an algorithm and the need to analyze the algorithm			L1
2	a	Discuss how quick sort algorithm work to sort an array. Trace quick sort algorithm for the following dataset 65, 70, 75, 80, 85, 60, 55, 50, 45.	20	CO10	L2
	b				L4
	c	Consider the following set of 14 elements in an array list, -15, -6, 0, 7, 9, 23, 54, 82, 101, 112, 125, 131, 142, 151 when binary search is applied on these elements, find the elements which required maximum number of comparisons. Also determine average number of key comparison for successful search and unsuccessful search			L3
	d	Compute the average case time complexity of quick sort			L2
3	a	Write an algorithm to find out the articulation points of an undirected graph	20	CO10	L1
	b	Identify the articulation points and biconnected components for the graph shown in Figure 1. Consider vertex '1' as the starting point.		CO10	L2
	c	Define spanning tree and minimal spanning tree			L1
	d	Differentiate connected and disconnected graphs			L2
4	a	Compute the optimal solution for knapsack problem using greedy method N=3, M= 20, (p1,p2,p3)= (25,24,15), (w1,w2,w3) =(18,15,10)	20		L2
	b	Differentiate breadth first search and depth first search			L2
	c	State single source shortest path problem			L1
	d	Write the procedure of greedy method			L3

b. Assignment – 3

Note: A distinct assignment to be assigned to each student.

Model Assignment Questions							
Crs Code:	CS501PC	Sem:	I	Marks:	5 / 10	Time:	90 – 120 minutes
Course:	Design and Analysis of Algorithms						
Note: Each student to answer 2-3 assignments. Each assignment carries equal mark.							

SNo	USN	Assignment Description	Marks	CO	Level
1		Discuss various the asymptotic notations used for best case average case and worst case analysis of algorithms	5	CO9	L2
2		Discuss binary search algorithm and analyze its time complexity	5	CO9	L3
3		List asymptotic notations for big 'Oh', omega and theta?		CO10	L4
4		Describe best case, average case and worst case efficiency of	5	CO10	L3

		an algorithm?			
5		Illustrate merge sort algorithm and discuss time complexity in both worst case and average cases.			
6		Describe the advantage of Strassen's matrix multiplication when compared to normal matrix multiplication for the any two 16 x 16 matrices			
7		Explain quick sort algorithm and simulate it for the following data: 20, 35, 10, 16, 54, 21, 25			
8		Write and explain iterative binary search algorithm			
9		Sort the list of numbers using merge sort: 78, 32, 42, 62, 98, 12, 34, 83			
10		Usemerge sort on following letters H, K, P,C,S,K,R,A,B,L			
11		Write and solve recurrence relation for Strassen's matrix multiplication			
12		Define connected component, bi-connected component			
13		Illustrate how to identify given graph is connected or not			
14		Explain weighting rule for finding UNION of sets and collapsing rule			
15		Describe graph coloring problem and write an algorithm for m-coloring problem			
16		Write an algorithm for Hamiltonian cycle with an example			
17		Write an algorithm for N-queens problem using backtracking			
18		Identify Hamiltonian cycle from the following graph			
19		Describe graph coloring problem and write an algorithm for m-coloring problem			
20		Apply the backtracking algorithm to solve the following instance of the sum of subsets problem S={5,10,12,13,15,18} and d=30			
21		Explain single source shortest path problem with example using greedy method			
22		Discuss the knapsack problem with suitable example			
23		Discuss the greedy method for generating the shortest paths			
24		Define job sequencing with deadlines problem			
25		Compute the optimal solution for job sequencing with deadlines using greedy method. N=4, profits (p1,p2,p3,p4) = (100,10,15,27), Deadlines (d1,d2,d3,d4) = (2,1,2,1)			
26		Compute the optimal solution for knapsack problem using greedy method N=3, M= 20, (p1,p2,p3)= (25,24,15), (w1,w2,w3) =(18,15,10)			
27		Write the procedure of greedy method.			
28		Write high-level description of job sequencing algorithm			
29		Describe job sequencing with deadlines problem and write the algorithm			
30		Statesingle source shortest path problem			
31		Write inorder, preorder, post order traversal of the tree with example.			
32		Illustrate BFS and DFS traversals of the graph with example.			
33		Explain in detail about AND / OR graph.			
34		Differentiate divide and conquer and greedy method.			
35		Discuss various tree traversal techniques with examples			
36		Discuss game trees			
37		What is meant by divide and conquer? Give the recurrence relation for divide and conquer			
38		Explain algorithm design technique?			
39		List and explain the applications of backtracking?			
40		Explain 8 – Queens problem			

41		Define and explain Sum of Subsets problem			
42		Compute the optimal solution for job sequencing with deadlines using greedy method. N=4, profits (p1,p2,p3,p4) = (100,10,15,27), Deadlines (d1,d2,d3,d4) = (2,1,2,1)			
43		Compute the optimal solution for knapsack problem using greedy method N=3, M= 20, (p1,p2,p3)= (25,24,15), (w1,w2,w3) =(18,15,10)			
44		Write an algorithm for Hamiltonian cycle with an example			
45		Write an algorithm for N-queens problem using backtracking			
46		Explain quick sort algorithm and simulate it for the following data: 20, 35, 10, 16, 54, 21, 25			
47		Explain 8 – Queens problem			

F. EXAM PREPARATION

1. University Model Question Paper

Course:	Design and Analysis of Algorithms					Month / Year	May /2018	
Crs Code:	CS501PC	Sem:	I	Marks:	100	Time:	180 minutes	
-	**Note**	Answer all FIVE full questions. All questions carry equal marks.				**Marks**	**CO**	**Level**
1	a	What is order of growth of an algorithm? Give formal definition of Worst case and Average case efficiencies				16 / 20	CO1	
	b	Write the non recursive algorithm for finding the Fibonacci sequence and derive the complexity						
	c	Sort the following elements using quick sort 11, 8, 10, 6, 19, 12, 7, 14					CO2	
	d	Solve the recurrence relation for the time complexity: T(n) = 2 If n=2 T(n) = 2T (n/2) + 3 * n If n2						
		OR						
-	a	Present the behavior of weighted union on the following sequence of union starting from the initial configuration as p[i]=-count[i]=-1, 1<=i<=8, Union(1,2), Union(3,4), Union(5,6) , Union(7,8), Union(1,3), Union(5,7), Union(1,5)				16 / 20	CO1	
	b	Present an algorithm height union that uses the height rule for union operation instead of the weighted rule. The rule is defined as below If the height of a tree i is less than that of the tree j then make j the parent of i otherwise make i the parent of j.					CO2	
	c	Write time complexities ofbreadth first search for the inputs of adjacency list and adjacency matrix						
	d	Write and explain the algorithms ofbreadth first search algorithm with example						
2	a	Derive the average case time complexity of quick sort and merge sort methods				16 / 20	C03	
	b	Describe the advantage of Strassen's matrix multiplication when compared to normal matrix multiplication for the any two 16 x 16 matrices						
	c	Write a procedure DIVIDE(b,T) to implement SPLIT(b,s) instruction which partitions a 2-3 tree T about a leaf 'b' so that all leaves to the left of 'b' and 'b' itself is in one 2-3 tree and leaves to the right of 'b' are in a second 2-3 tree.					CO4	
	d	Discuss the dynamic programming solutions for the problems of reliability design and traveling sales person problem.						
		OR						
-	a	Draw the portion of a state space tree generated by FIFOBB, LCBB and LIFOBB for the job sequencing with deadlines instance n=5, (p1,p2, ….,p5)=(6,3,4,8,5), (t1,t2,….,t5)=(2,1,2,1,1) and (d1,d2,…,d5)=(3,1,4,2,4). What is the penalty corresponding to an optimal solution? Use a variable tuple size formulation and ĉ (.) and u (.).				16 / 20	CO3	
	b	Using Divide and Conquer approach coupled with the set generation					CO4	

		approach, show how to obtain an O(2n/2) algorithm for 0/1 Knapsack problem.			
	c	Develop an algorithm that uses this approach to solve the 0/1 Knapsack problem.			
	d	What is a balanced tree? Differentiate between 2-3 trees and AVL trees.			
3	a	Draw the state space tree for m-closing graph using a suitable graph.	16 / 20	CO5	
	b	Define depth first search (DFS). Use DFS to determine if a graph is connected.			
	c	Conduct Depth First Spanning Tree and Breadth First Spanning Tree for the graph as shown		CO6	
	d	State the Cook's theorem. What is significance of this algorithm			
-	a	What is the Optimal Binary Search Tree problem? Explain how principal of optimality holds for this problem. Also explain how it is solved using dynamic programming.	16 / 20	CO5	
	b	What is the difference between Greedy approach and Dynamic Programming? Explain with example			
	c	Explain the terms P, NP, NP-Hard and NP-Complete with suitable example. Also give relationship between them.		CO6	
	d	Show that Hamilton cycle problem is NP-Complete.			
4	a	Present a program schema for a FIFO Branch and Bound search for a Least-Cost answer node.	16 / 20	CO7	
	b	What is graph coloring? Present an algorithm which finds all m-colorings of a graph.			
	c	What do you mean by forward and backward approach of problem solving in Dynamic programming?		CO8	
	d	Analyze precisely the computing time and space requirements of this new version of Prim's algorithm using adjacency lists.			
		OR			
-	a	Consider the LCBB traveling sales person algorithm described using the dynamic state space tree formulation. Let A and B be nodes. Let B be the child of A. If the edge (A,B) represents the inclusion of edge in the tour, then in the reduced matrix for B all entries in row i and column j are set to ∞. In addition, one more entry is set to ∞. Obtain an efficient way to determine this entry	16 / 20	CO7	
	b	Compare and contrast Brute force approach Vs Backtracking		CO8	
	c	Write Prim's algorithm under the assumption that the graphs are represented by adjacency lists.			
	d	What are the differences between the Greedy and Dynamic programming methods of problem solving?			
5	a	Present the behavior of weighted union on the following sequence of union starting from the initial configuration as p[i]=-count[i]=-1, 1<=i<=8, Union(1,2), Union(3,4), Union(5,6) , Union(7,8), Union(1,3), Union(5,7), Union(1,5)	16 / 20	CO9	
	b	Present an algorithm height union that uses the height rule for union operation instead of the weighted rule. The rule is defined as below If the height of a tree i is less than that of the tree j then make j the parent of i otherwise make i the parent of j.		CO10	
	c	Write time complexities ofbreadth first search for the inputs of adjacency list and adjacency matrix			
	d	Write and explain the algorithms ofbreadth first search algorithm with example			
		OR			
	a	Present a program schema for a FIFO Branch and Bound search for a	16 /	CO9	

		Least-Cost answer node.	20		
	b	What is graph coloring? Present an algorithm which finds all m-colorings of a graph.			
	c	What do you mean by forward and backward approach of problem solving in Dynamic programming?		C010	
	d	Analyze precisely the computing time and space requirements of this new version of Prim's algorithm using adjacency lists.			

2. SEE Important Questions

Course:		Design and Analysis of Algorithms					Month / Year	May /2018	
Crs Code:		CS501PC	Sem:	3	Marks:	100	Time:	180 minutes	
	Note	Answer all FIVE full questions. All questions carry equal marks.					-	-	
Module	Qno.	Important Question					**Marks**	**CO**	**Year**
1	1	Define time complexity. Describe different notations used to represent these complexities. Illustrate.					16 / 20		2004
	2	Analyze the average case time complexity of Quick sort.							2004
	3	If k is a non-negative constant, then show that the solution to the given recurrence equation, for n a power of 2 is T(n) =3knlog3 – 2kn. T(n) = k, n=1 3T(n/2)+kn, n>1							2004
	4	Compare Merge sort and Quick sort for the given data sets. 10, 30, 15, 45, 25, 30, 35, 20, 30, 40, 50							2007
	5	Design a Divide and Conquer algorithm for computing the number of levels in a binary tree. Compute the efficiency of the above algorithm.							2007
2	1	Using Divide and Conquer approach coupled with the set generation approach, show how to obtain an O(2n/2) algorithm for 0/1 Knapsack problem					16 / 20		2005
	2	Write a non-recursive algorithm for the pre-order traversal of a binary tree T, using stacks							2005
	3	Write Prim's algorithm under the assumption that the graphs are represented by adjacency lists.							2009
	4	Show that the in-order and post order sequences of a binary tree uniquely define the binary tree.							2006
	5	Explain in detail how the technique of backtracking can be applied to solve the 8 queen's problem. Present the required algorithms.							2004
3	1	What is graph coloring? Present an algorithm which finds all m-colorings of a graph.					16 / 20		2006
	2	What are the differences between the Greedy and Dynamic programming methods of problem solving?							2006
	3	Draw the state space tree for m-closing graph using a suitable graph.							2007
	4	Compare and contrast Brute force approach Vs Backtracking							2004
	5	Present an algorithm which finds all m-colorings of a graph.							2004
4	1	What do you mean by forward and backward approach of problem solving in Dynamic programming?					16 / 20		2004
	2	Discuss the dynamic programming solutions for the problems of reliability design and traveling sales person problem.							2004
	3	Develop an algorithm that uses this approach to solve the 0/1 Knapsack problem							2006
	4	Using Divide and Conquer approach coupled with the set generation approach, show how to obtain an O(2n/2) algorithm for 0/1 Knapsack problem							2004
	5	Explain the Job sequencing with dead line algorithm and also find the							2007

		solution for the instance n=7, (P1,P2,…. ,P7)=(3,5,20,18,1,6,30) and (D1,D2,…., D7)=(1,3,4,3,2,1,2).			
5	1	Present a program schema for a FIFO Branch and Bound search for a Least-Cost answer node.	16 / 20		2009
	2	Write a program schema for a LIFO Branch and Bound for a Least-Cost answer node.			2007
	3	Consider the LCBB traveling sales person algorithm described using the dynamic state space tree formulation. Let A and B be nodes. Let B be the child of A. If the edge (A,B) represents the inclusion of edge in the tour, then in the reduced matrix for B all entries in row i and column j are set to ∞. In addition, one more entry is set to ∞. Obtain an efficient way to determine this entry			2007
	4	Draw the portion of state space tree generated by LCBB for the knapsack instances: n = 4; (P1; P2;P3 ; P4) = (10; 10; 12; 18); (w1w2;w3;w4) = (2;4; 6; 9) and M = 15			2004
	5	a) Explain the Clique problem and write the algorithm for the same. b) Write a Non-Deterministic Knapsack algorithm			2005