K.E.Society's

Rajarambapu Institute of Technology, Rajaramnagar

(An Autonomous Institute, affiliated to SUK)

End Semester Examination (Summer 2018)

F.Y.M.Tech. Civil Const.Mgt. Sem- II

Course Code: CCME12   **Course Name**: PE III: Project Formulation & Appraisal

Day & Date: Saturday, 05/05/2018

Time   : 10.30 am to 12.30 pm   Max Marks: 50

Instructions: 1) All questions are compulsory
2) Figures to the right indicate maximum marks
3) Assume suitable data if not given
4) Use of non-programmable calculator is allowed

Q.1 (a) Government of Maharashtra is planning to invest Rs. 3,00,000 in road widening project. 06 CO2
They have estimated future cashflow for four years. Toll collected on the same road is
estimated and provided in following paragraph. By using Benefit-Cost Ratio method identify
whether the following project be accepted or not? (Rate of interest:- 9.99%)
Toll Collection at the end of first year:- Rs. 70,000
Toll Collectionat the end of second year:- Rs. 80,000
Toll Collectionat the end of third year:- Rs. 97,000
Toll Collectionat the end of fourth year:- Rs. 1,50,000

(b) Discuss in detail the steps involved in market analysis. 08 CO1

OR

(c) B2B is a civil engineering company set up by four persons with experience in the 08 CO1
construction industry about 10 years ago. One of them is owns 40 percent equity of B2B; the
other three20 percent each. B2B's last project of township turned out to be successful in
market. Enthused by this success, the promoters want to start two more townships by the
company. To achieve this goal the company plans to raise Rs. 50 crore from external
sources. Suggest the financing method that seems most appropriate for each situation and
give your reasons for the same.

Q.2 (a) An entrepreneur wants to do financial analysis for his project ideas. He approached your 08 CO1
office for the solution. Guide him by providing detailed information of techniques available
for financial appraisal.

(b) Compare the projects 'A' and 'B' using net present value method, assuming a discount rate 10 CO3
of 11% per annum.

Year	Project A (Cashflow)	Project B (Cashflow)
0	-10,00,000	-10,00,000
1	8,00,000	4,00,000
2	6,00,000	4,00,000
3	--	3,00,000
4	--	3,00,000
5	--	2,00,000

OR

(c) ABC company limited proposes to start a new venture for the manufacture of water valve. 10 CO3
The estimates of the new venture are as under:

Output of valves per annum	: 3,00,000 nos
Expected sales revenue per annum	: Rs. 1,50,00,000
Fixed costs	: Rs. 35,00,000
Variable costs	: Rs. 66,00,000

a) If the selling price comes down to Rs. 40 per unit, find out its effect on BEP.
b) If the fixed cost increases to Rs. 40,00,000, find out its effect on BEP.
c) If the variable cost increases by 10 %, find its effect on BEP.

Q.3 (a) Discuss the procedure for determining whether a project should be continued, terminated, or 10 CO4
divested.

(b) Discuss in detail qualities expected from entrepreneur. 08 CO4

OR

(c) Discuss the importance and steps of project auditing. 08 CO4

Enroll No

Q.P.Code

EB 1130

Course Code: CCM2022   **Course Name**: Construction Contracts

Day & Date: Saturday, 28/04/2018.

Time   : 10.30 am to 12.30 pm   Max Marks: 50

Instructions: 1) All questions are compulsory
2) Figures to the right indicate maximum marks
3) Assume suitable data if not given
4) Use of non-programmable calculator is allowed

Q.1	Attempt any TWO		
(a)	Discuss pre-award and award phase activities for construction contracts	08	CO1
(b)	What is mean by Bill of Quantities? Explain its significance in Detailed estimate.	08	CO1
(c)	Discuss types of contract with suitable example.	08	CO1

Q.2	Attempt any THREE		
(a)	An arbitrator has delegated his powers to others. Can his award be valid?	06	CO2
(b)	An unreasonable delay occurred on the part of the arbitrator in deciding a particular matter. Will it affect the award of arbitrator?	06	CO2
(c)	In an arbitration proceeding, three arbitrators were appointed. One of the arbitrator refused to act and the award was given by the other two. Can this award be treated as a majority award?	06	CO2
(d)	The arbitrator has an interest in the subject matter of the agreement and the parties to the agreement come to know this fact after agreement is executed. Can this revocate the agreement? Why?	06	CO2

Q.3	Attempt any TWO		
(a)	Discuss role of bailor and bailee in bailment of pledge.	08	CO2
(b)	Discuss the circumstances under which surety can be discharged from his liability.	08	CO2
(c)	Discuss importance and procedure of arbitration in construction industry	08	CO2

Enroll No	K.E.Society's	Q.P.Code
	Rajarambapu Institute of Technology, Rajaramnagar (An Autonomous Institute, affiliated to SUK) End Semester Examination (Summer 2018) F.Y.M.Tech. Civil Const.Mgt. Sem- II	EB 1252

Course Code: CCME24　　　**Course Name**: PE III: Highway Project Development

Day & Date: ...Tue, 08/05/2018
Time : ...10:30 am - 12:30 pm　　　　　　　　Max Marks: 50

Instructions: 1) All questions are compulsory

2) Figures to the right indicate maximum marks

3) Assume suitable data if not given

4) Use of non-programmable calculator is allowed

Q.1

(a) List problems faced in land acquisition and utility shifting on highway expansion projects. Describe mitigation process.　　06　1

(b) Describe "Right of Way" its need and applications.　　06　1

(c) Develop feasibility study process chart with reference to highway projects.　　06

OR

(c) Is the rehabilitation and resettlement policy in India with reference to National Highways Act; good or bad, Justify?　　**06**　1

Q.2

(a) Is PPP project procurement process success or failure in India, comment?　　05　3

(b) List the constraints faced by contractors in site investigation, explain your action plan to deal with any two constrains.　　06　4

OR

(b) Illustrate incorporation of lead and lift statements for earthwork calculation.　　06　4

(c) Critique tendering and contract selection process by NHAI in India.　　05　4

OR

(c) Defend the statement, "site investigation plays a key role in planning and execution of highway project".　　05　4

Q.3

(a) Describe the impact of MORTH on the road construction procedure laid by NHAI.　　06　5

(b) Develop a work method statement for construction of rigid pavement for National highway.　　05　5

OR

(b) Develop a work method statement for construction of flexible pavement for National highway.　　05　5

(c) Reason why delay occurs in project handover, explain impact of delayed project handover.　　05　5

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End Semester Examination (Summer 2018)
F.Y.M.Tech. Civil Const.Mgt. Sem- II

Q.P.Code

EB 1176

Course Code: CCM2032   **Course Name**: Resource Management

Day & Date: Thu., 03/05/2018
Time   : 10:30 am – 12:30 pm

Max Marks: 50

Instructions: 1) All questions are compulsory

2) Figures to the right indicate maximum marks

3) Assume suitable data if not given

4) Use of non-programmable calculator is allowed

Q.1

(a)	Develop stores layout for storing 2000 cement bags on construction site.		06	3
(b)	Describe how standardization helps reducing cost.		06	1

OR

(b)	Describe operations involved in human resource management.		06	4
(c)	Develop a code for any one construction material and elaborate the thought process.		06	1

OR

(c)	Explain with example, what will be your selection process for selecting a civil engineer for your construction site.		06	4

Q.2

(a)	For the project undertaken by you as ISE; describe HRM issues in that organization and resolutions provided by you.		05	5
(b)	Explain basic features of labour welfare.		05	4
(c)	Describe process of performance appraisal.		06	5

OR

(c)	Describe performance appraisal methods.		06	**5**

Q.3

(a)	Explain where supplier evaluation and selection decisions are applicable. State one example.		05	3

OR

(a)	Explain, what a good supplier should do?		05	3
(b)	Inventory hides Problems. Describe with relevant example.		05	3

(c) The monthly demand of bicycles in a shop is as follows for 6 months.   06   3

Month	Demand
1	120
2	80
3	340
4	25
5	230
6	175

The shopkeeper wants to order the bicycles from dealer regularly. The ordering cost is Rs. 800 per order and carrying cost of bicycle is 10% of its cost which is Rs. 600. The lead time is one month. What is the ordering quantity and reorder level?

OR

(c) A company manufactures a line of ten items. The usage and unit cost are shown   06   3
in the following table, along with the annual dollar usage. The latter is obtained by multiplying the unit usage by the unit cost.

Part No.	Unit Usage	Unit Cost	Annual usage cost
1	1100	2	2200
2	600	40	24000
3	100	4	400
4	1300	1	1300
5	100	60	6000
6	10	25	250
7	100	2	200
8	1500	2	3000
9	200	2	400
10	500	1	500

Group items into an A, B and C classification.

K.E.Society's

Rajarambapu Institute of Technology, Rajaramnagar.
(An Autonomous Institute)
End Semester Examination - April - 2018
First Year M. Tech. Civil Construction Management SEMESTER – I
Project Economics and Financial Management (CCM2012)

Day and Date: Thu., 26/04/2018

Time: 10.30 am – 12.30 pm   Max Marks- 50

Instructions:
   1) All questions are compulsory.
   2) Assume suitable data where ever necessary.

Q.1 Attempt any two

  (a) Discuss the key considerations in determining the dept equity ratio of the firm.   (9) CO2

  (b) Describe the receipts and payments method of cash budgeting.   (9) CO3

                                    OR

(c) 1. A company wants to have enough money to purchase a new machine in 4 years. If the machine will cost Rs. 1250000 how much should the company set aside each year if the account earns 8% per year?   (5) CO4

   2. A company is examining its cash flow requirements for the next five years. It expects to replace a few machines and office computers at various times over a five year planning period. The company expects to spend Rs 45000 two years from now, Rs. 40000 three years from now and Rs. 25000 five years from now. What is the present worth of the planned expenditure at an interest rate of 6% per year?   (4) CO4

Q. 2 Attempt any two.
   a) Two engineers have presented a proposal for composite materials. Select the better material if the rate of interest is 12% per year and other details are as given below.
                                                                (8) CO5

	Material A	Material B
INITIAL COST	Rs. 40000	Rs. 60000
SALVAGE VALUE	Rs. 10000	Rs. 8000
ANNUAL MAINTENANCE	Rs. 13000	Rs. 5000
LIFE	5 Yrs.	5Yrs.

b) A construction company wants to evaluate two equipments. If rate of interest is 12% per year determine which alternative is economically better. (8) CO5

EQUIPMENT	X	Y
INITIAL COST	Rs. 40000	Rs. 75000
SALVAGE VALUE	Rs. 10000	Rs. 7000
ANNUAL MAINTENANCE	Rs. 25000	Rs. 15000
LIFE	4 Yrs.	6Yrs.

(c) Describe the capitalized cost method of project analysis with detailed procedure of calculating capitalized cost of a project. (8) CO5

Q. 3 Attempt the following.
(a) A automobile company wants to manufacture gears that the company can sell for Rs. 300 each. It will incur materials cost of Rs. 90 per unit, labour cost of Rs. 120 per unit and variable overhead cost of Rs.30 per unit. The annual fixed cost is Rs. 240000. Demand for next year is estimated at 4000 units. Would it be profitable for the company to makes the gears? (8) CO5

(b) A firm is considering replacement of an equipment , whose first cost is Rs. 4000 and the scrap value is negligible at the end of any year. The maintenance cost is zero during the first year and it increases by Rs. 200 every year thereafter. When should the equipment be replaced if i = 10%? (8) CO5

(c) UGC is planning to award a grant of Rs.5,00,00,000 to ABC institute to upgrade its engineering education. The grant will extend over a period of 10 years and will create a estimated saving of Rs.50,00,000 per year in salaries and other expenses. UGC uses a interest of 5% per year on all grants award. This grant will remove Rs. 2,00,000 from other funding per year. To make this program successful Rs.5,00,000 per year operating cost will incurred from the regular O/M cost budget. Use the B/C method to determine if the grant is economically justified? (8) CO5

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End Semester Examination (Summer 2018)
F.Y.M.Tech. Civil Const.Mgt. Sem- II

Q.P.Code

EB 1295

Course Code: CCME46   **Course Name**: PE III: Valuation of Immovable Properties
Day & Date: Saturday, 12/05/2018
Time   : 10.30 am to 12.30 pm   Max Marks: 50

Instructions: 1) All questions are compulsory
                    2) Figures to the right indicate maximum marks
                    3) Assume suitable data if not given
                    4) Use of non-programmable calculator is allowed

Q.1   A freehold plot of land 20 × 25 m located in the middle class locality of city. At present plot is surrounded by compound wall of height 6 feet all around the plot. Also plot is furnished with a double story building having built-up area 250 m^2 (130 G.F & 120 F.F). The building is constructed in the year 2010 with average specifications. The future life of the structure is likely to be 42 years.

Present rate of Construction in the locality (Medium specifications)- Rs. 14000-15000 per m^2

Present rate of land in the locality- Rs. 15000-17000 per m^2

Rent in the locality- Rs. 22-25 per m^2

Municipal taxes- 30 %

Electricity charges- Rs. 45000 per year.

Water charges- Rs. 10,000 per year.

Cost of development (deposited to Municipal office)- Rs 600 per m^2

Rate of depreciation- 9%

Assume suitable data whenever required and highlight the same.

(a)	Workout the valuation of the building and plot by using Land and building method.	10	CO2
(b)	Workout the valuation of the building and plot by using Rental method of valuation.	10	CO2
(c)	Workout the valuation of the building and plot by using hypothetical building scheme method.	20	CO2

Q.2	(a)	Discuss with example following forms of values.(Any **FIVE**)	10	CO1

Book value, Salvage value, Scrap value, Replacement value, Market value, Potential value, Distress value, Monopoly value, Speculative value, Sentimental value.

Enroll No.

K. E. Society's
Rajarambapu Institute of Technology, Rajaramnagar
(An Autonomous Institute affiliated to S.U.K.)
End Semester Examination, April 2018

Q. P. Code

EB 1272

F. Y. M. Tech. (Civil Construction and Management Engineering) Semester–II
Course Name: Advanced Engineering Mathematics **Code:** SHP 524

Day & Date: Thu., 10/05/2018

Time : 10.30 am – 12.30 pm   Max. Marks –50

Instructions: *i) All questions are compulsory.*
ii) Figures to the right indicate full marks.
iii) Use of non-programmable calculator is allowed.

Q.1 Attempt the following.

a) The following table of 10 random numbers of two digits each is provided to the   **[5]**   CO1
field investigator

34	96	61	85	69
78	50	02	27	13

Use this table to make a random selection of 5 plots out of 40.

b) What are the objections of sampling theory?   .   **[5]**   CO3
                                   OR
b) Explain in detail the concept of Standard Error.   **[5]**   CO3

Q.2 Attempt the following:

a) What is a hypothesis? Describe null and alternative hypothesis.   **[5]**   CO3

b) A die is rolled 49152 times and the number of times it shows 4, 5 or 6 is 25149. **[5]**   CO3
Test the hypothesis that the die is unbiased.

c) 450 men are found to be smokers in a sample of 600 men. In another sample of 900 **[5]**   CO3
men, 450 men are smokers. Are the two groups different in the manner of smoking?
Justify your answer.

d) The demand for a particular spare part in a factory was found to be varying from   **[5]**   CO3
day to day. In a sample study the following information was obtained

Days	Mon	Tue	Wed	Thus	Fri	Sat
No. of parts demand	1124	1125	1110	1120	1126	1115

Test the hypothesis that the number of parts does not depend on the day of the week.
                                   OR
d) The specimen of copper wires drawn from a larger lot have the following breaking   **[5]**   CO3
strength (in Kg. Wt.):
578, 572, 570, 568, 572, 578, 570, 572, 596, 544.
Test whether the mean breaking strength of the lot may be taken to be 578 Kg. Wt.
(Given: for 5% level of significance for 9 d. f., t = 2.262).

Q.3   Attempt of the following.

a) Compute the coefficient of correlation between x and y from the following data.   **[10]**   CO4

x:	23	28	42	17	26	35	29	37	16	46
y:	25	22	38	21	27	39	24	32	18	44

Interpret the result.

b) From the following data, obtain the two equations of the line of regressions if the   **[10]**   CO4
mean values $\bar{x}$ and/or $\bar{y}$ come out to be in fractions or if the values of x and y are
large.

Sales:	91	97	108	121	67	124	51	73	111	57
Purchase:	71	75	69	97	70	91	39	61	80	47

OR

b) Calculate the multiple regression equation for the information given below.   **[10]**   CO4

X_0: (Dependent variable)	13	6	8	11	13	14	13	2
X_1: (Independent variable)	14	6	10	12	14	20	12	8
X_2: (Independent variable)	20	6	11	28	31	32	25	7
X_3: (Independent variable)	18	7	8	10	18	19	9	7

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