

K. E Society's
Rajarambapu Institute of Technology, Rajaramnagar
(An Autonomous Institute)

Enroll.
No

End Semester Examination, May 2014
F. Y. M. Tech. (Civil-Structure), Semester-II

QP
Code EM 323

Course: **Finite Element Analysis** Code: CST 502

Day/date- Wednesday, 7/5/2014

Max. Marks-100

Time: 10.00 AM to 1.00 PM.

- Instructions:*
- i) All questions are compulsory
 - ii) Figures to the right indicate full marks
 - iii) Assume suitable data, if required and mention it clearly
 - iv) Use of nonprogrammable calculator is allowed

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- Q.1a) List various variational methods of approximation used in FEM? Explain any one in brief. 8
- OR**
- a) Describe the procedure to formulate element stiffness matrix $[K]$ for CST element starting from displacement function. 8
- b) A cantilever bar of uniform cross section fixed at one end and free at other end is subjected to uniform axial load q . Find expression for stress by using Rayleigh Ritz method. 8
- Q2a) Derive element stiffness matrix $[K]$ for truss element in its most general orientation by using direct method. 13
- b) State assumption made in process of discretization. 4
- OR**
- b) Explain role of displacement function in finite element analysis. 4
- Q.3a) In which circumstances you will use 3D elements? What are the various types of 3D elements? 6
- OR**
- a) Describe effect of element aspect ratio on accuracy of finite element solution. 6
- b) Derive element stiffness matrix $[K]$ for triangular ring element. 11
- Q.4a) Explain importance of shape function. 5
- OR**
- a) State different types of shell elements with example. 5

- b) Illustrate detailed procedure to obtain element stiffness matrix [K] for ACM element. 12
- Q.5a) Explain the role of Pascal's triangle in FEM. 4
- OR**
- a) Define Isoparametric elements? Discuss sub parametric element. 4
- b) Determine natural frequencies for continuous bar vibrating freely in axial direction by using two elements. 13
- Q.6a) Evaluate the integral 10
- $$I = 3 \int_0^7 f(x) dx, \text{ where } f(x) = 4x^2 + 3x + 10, \text{ use two point Gaussian quadrature.}$$
- b) Develop relation between natural and cartesian coordinate system. 6
- OR**
- b) Distinguish between consistent and lumped mass matrix. 6

First year M. Tech. Civil, Construction and Management Semester II

Advanced Construction Techniques and Equipments Subject Code: CCM502

Day & Date: Wednesday, 7/5/2014

Time: 10.00 AM to 1.00 PM

Max Marks: 100

Instructions:

- i. All questions are compulsory.
- ii. Figures to the right indicate marks.
- iii. Use of non-programmable calculators allowed
- iv. Assume suitable data wherever necessary

Q.1 a) Case study: Deepening of Vishakhapatnam Port

18

M/S Vishakhapatnam Port Trust is proposing to deepen the port of Vishakhapatnam which involves dredging and removal of rock strata, mainly; in the entrance channel and inner turning circle under phase II. This work is being taken up further, to the successful completion of phase I deepening where in about 66,150cu.m. of hard rock dredging utilizing underwater drilling and blasting has been done in last two years. It is envisaged that the phase II deepening may involve close to 70,000 cu. m. of hard rock dredging. The type of strata is mostly Khondalite with various degree of weathering. The formation has lot of cleavages/fissures and is gently dipping. The rock is overlain by soil consisting of silt, sand, gravel, pebbles ect. Depth of cutting in rock at the bottom of channel varies from 1-3 m for achieving -13.5m dredged level.

Read the case carefully and answer ANY FOUR from the following questions.

- a) Develop a process to complete the desired work.
- b) List and justify equipments selection for the job.
- c) Select and justify the economical method for transportation of excavated material.
- d) Justify the method selected for underwater drilling.
- e) Justify the fragmentation desired based on the method of hauling.
- f) Design the blast pattern and justify the same.

Q.2 Solve any Three

18

- a) Describe the need of dewatering? Explain stating examples. 6
- b) Explain various types of cut-offs used to achieve permanent ground water control. 6
- c) Outline the steps involved in the design of: (Any One) 6
 - a) Jet-educator dewatering system
 - b) Open excavation dewatering system
- d) List different types of WellPoint systems? Explain the construction steps involved in WellPoint system. 6

Q.3	Question 'a' is compulsory, solve any two from remaining	18
a)	An underground waterline in a congested area has reached its service life, and it's planned to install a new line. It is proposed not to disturb the running operation of the city and aesthetics of the area. Select the method you propose to perform the task. Justify your choice.	8
b)	Explain CIPP method, State Advantages and disadvantages w.r.t. other methods.	5
c)	Identify the factors you will consider to describe the application of Trenchless Technology?	5
d)	Illustrate the disadvantages of traditional open trench method? Explain with example advantages offered by trenchless technology.	5
Q.4	Solve any three:	18
a)	Defend the need of pile foundation? Explain with example application of various types of piles.	6
b)	Explain the factors influencing choice of the pile?	6
c)	List the factors affecting selection of pile driving equipment? Explain the operation of diesel hammer.	6
d)	Explain Displacement and non-displacement pile construction. Justify with example the applications of each.	6
Q.5	Question 'a' is compulsory, solve any two from remaining	16
a)	Refer case study (<i>Case study: Deepening of Vishakhapatnam Port</i>) stated above and answer the following questions:	8
	a) Explain the process you will select to perform underwater drilling.	
	b) What care should be taken while loading explosives? And which explosives you will select and why?	
b)	List factors controlling drilling production? Reason why and how?	4
c)	Explain step wise procedure to compute production of drilling operation.	4
d)	Safety parameters are important in blasting operation. In order to avoid any mishap what precautions you will take on a construction project?	4
Q.6	Solve any two	12
a)	List factors you will consider to select a material handling system?	6
b)	Organize various material handling equipments based on their area of application?	6
c)	On the earthwork projects, horizontal transportation plays important role; explain parameters you will consider to choose type and size of equipment for earth work operation	6
d)	Explain principles of material handling? State examples.	6

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Q.P. Code | EM336

Rajarambapu Institute of Technology, Rajaramnagar

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First Year M. Tech. Civil Engineering (Structures) SEMESTER – II

CS7504 Design of Earthquake Resistance Structures

Day and Date: Fri, 9/5/2014

Time: 10.00 am - 1.00 pm

Max. Marks- 100

- Instructions-
- All questions are compulsory.
 - Figures to the right indicate full marks.
 - Assume suitable data wherever necessary.

Q. 01. A) Explain different methods of prediction of earthquake? Examine each one for effectiveness for prediction of earthquake? 09

B) With the help of neat sketch, explain Earthquake waves? 09

OR

B) Tell application of design response spectrum for designing earthquake resisting structures. 08

Q. 02. A) Explain the procedure of construction of tripartite response spectrum? Identify situations where this spectrum is useful? 08

B) Explain the philosophy of design of earthquake resistant structures? 08

OR

B) Appraise continental drift theory? 08

3) The details of a three storey RCC school building is as given below

- | | |
|----------------------------------------------------|------------------------------|
| (m) The spacing between columns in both directions | : 4m |
| (n) The number of bays in both directions | : 2 |
| (o) The height of each floor | : 3.5m |
| (p) The thickness of slab | : 150mm |
| (q) Thickness of brickwork along periphery | : 230mm |
| (r) Grades of steel and concrete | : Fe 415 and M ₂₀ |

The building is located in seismic zone V. The type of soil encountered is medium stiff and it is proposed to design the building with a special moment resistant frame. The intensity of dead load is 15 KN/m^2 and the floors are to cater to an imposed load of 3.25 KN/m^2 . Determine the design seismic loads on the structure by static analysis or dynamic method. 18

4) A) Comment on "Earthquake Resistant Design Philosophy". 08

B) Explain precautions to be taken at all levels for improving resistance to earthquake forces. 08

5) A) Write how ductility of a RC column can be enhanced? 04

A) Explain behavior of beam column junction during earthquake. 04

B) A beam member in a portal frame has a span of 5.5 m and carries an udl of 35 KN/m over entire span, including self weight of beam. The hogging bending moments at both ends are -80 KN-m and 150 KN-m and sagging bending moments are 90 KN-m and 40 KN-m respectively. The size of beam is $300 \times 600 \text{ mm}$. The grades of concrete and steel are M_{20} and Fe 415 respectively. Design beam for ductility as per IS 13920. 12

6) A) Explain with examples "Principles of Planning"? Explain concept "weak beam-strong column" in the design philosophy? 08

B) Identify different techniques for improving resistant to earthquake force for load bearing structures? 08

GOOD LUCK

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Q.P. Code	EM337
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End Semester Examination- May 2014
 First Year M. Tech. Construction Management SEMESTER – II
 Operations Research in Construction (CCM 504)

Day and Date: *Fri, 9/5/2014*

Time: *10.00am - 1.00pm*

Max Marks-100

Instructions:

- 1) All questions are compulsory
- 2) Figures to the right indicate full marks
- 3) Use of non-programmable calculator is allowed.

Q.1 a) Discriminate between decision making under risk and decision making under certainty. 06

OR

- a) Illustrate the theory of dominance in the solution of rectangular games. 06
 - b) Discuss the scope of OR in construction industry. 06
 - c) "OR plays an important role in decision making" Justify the statement by giving examples from civil engineering. 06
- Q.2 a) The following matrix gives the payoff of different strategies(alternatives) A_1, A_2, A_3 against conditions(events) E_1, E_2, E_3 and E_4 : 08

	E_1	E_2	E_3	E_4
A_1	Rs. 5000	-1000	6000	18000
A_2	20000	6000	400	200
A_3	20000	15000	-2000	1000

Indicate the decision taken under the following approach:
 Pessimistic, Optimistic, Regret and Equal probability.

OR

- a) A newspaper boy has the following probabilities of selling a magazine: 08

No. of copies sold	Probability
10	0.10
11	0.15
12	0.20
13	0.25
14	0.30

Cost of a copy is 30 paise and sale price is 50 paise. He cannot return unsold copies. Choose the best alternative available to newspaper boy.(Use Expected opportunity Criterion)

- b) Solve the following game by using principle of dominance. 10

		Player B					
		I	II	III	IV	V	VI
Player A	I	4	2	0	2	1	1
	II	4	3	1	3	2	2
	III	4	3	7	-5	1	2
	IV	4	3	4	-1	2	2
	V	4	-3	3	-2	2	2

- Q.3 a) Solve the following LPP by Simplex method 12

Maximize $Z = 2x_1 + 3x_2 + x_3 + 7x_4$

Subject to $8x_1 + 3x_2 + 4x_3 + x_4 \leq 6$

$2x_1 + 6x_2 + x_3 + 5x_4 \leq 3$

$x_1 + 4x_2 + 5x_3 + 2x_4 \leq 7$

With $x_1, x_2, x_3, x_4 \geq 0$

- b) Discuss the algorithm to solve LPP by Big-M Method. 04

OR

- b) Discuss the following terms 04
Key column, key row

- Q.4 a) A department of a company has five employees with five jobs to be performed. The time (in hours) that each man takes to perform each job in the effectiveness matrix. 10

		Employees				
		I	II	III	IV	V
Jobs	Excavation	10	5	13	15	16
	PCC	3	9	18	13	6
	Footing	10	7	2	2	2
	Rubble Masonry	7	11	9	7	12
	Earth Filling	7	9	10	4	12

How should the jobs be allocated, one per employee, so as to minimize the total man-hours?

- b) Indicate how you will test for optimality of initial feasible solution of a transportation problem. 06

OR

- b) Explain the various steps involved in solving transportation problem using:
North-West corner method 2) Least Cost method 06

- Q.5 a) Define queue and explain the various queue disciplines. 06

OR

- a) Discuss the concept of Dynamic Programming 06

- b) A network consists of following activities and their duration of a small project. Draw the network, mark critical path and find all types of floats. 10

Activity	1-2	1-3	2-8	3-4	4-5	4-7	4-8	5-6	6-7	7-8	7-9	8-9	9-10
Duration in days	36	4	2	2	15	9	10	4	9	9	8	20	20

- Q.6 a) Solve the following LPP by Graphical method 06

Minimize $Z = 2x_1 + x_2$
 Subject to $5x_1 + 10x_2 \leq 50$
 $x_1 + x_2 \geq 1$
 $x_2 \leq 4$

With $x_1, x_2 \geq 0$

- b) Determine an initial basic feasible solution by Vogel's approximation method.

06

		To			Supply
		I	II	III	
From	I	2	7	4	5
	II	3	3	1	8
	III	5	4	7	7
	IV	1	6	2	14
Demand		7	9	18	

OR

- b) Following matrix shows time in hrs. to perform the jobs on various equipments. Assign the jobs to find minimum cost.

06

		Equipment			
		1	2	3	4
Jobs	A	5	8	11	6
	B	8	5	9	6
	C	4	7	10	7
	D	10	4	7	3

- c) Under what conditions would you recommend the scheduling by PERT? Justify your answer with reasons.

04

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Q.P. Code	EM 357
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End Semester Examination- May 2014

First Year M. Tech. Civil Construction Management SEMESTER - II

Project Economics & Financial Management (CCM 506)Day and Date: Thursday, 15/5/2014Time: 10 AM TO 1 PM

Max Marks- 100

Instructions:

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

Q.1 Attempt any two.

- a) Identify use of engineering economy for civil engineering. (8)
- b) Illustrate the concept of accounting rate of return with suitable example. (8)
- c) Explain the concept of inflation, effects of inflation and control of inflation. (8)

Q. 2 Attempt any two.

a) If Rs 5000 are invested now in a common stock that are expected to yield Rs. 100 per year for 10 years and Rs. 7000 at the end of ten years. What is the rate of return? (9)

b) It is proposed to carry out construction of RCC building with an estimated cost of Rs. 400000 and no maintenance cost for the first 10 years. If the same building is constructed in structural steel work with asbestos cement roofing has an initial cost of Rs. 300000 but the steel has to be painted every two years at a cost of Rs. 20000. If the rate of interest is 10% , which is cheaper investment for first 10 years? (9)

c) A programme for replacement of production equipment has been developed which calls for an expenditure of Rs. 2 lakhs five year from now, Rs 1.5 lakhs 8 years from now and Rs 2.75 lakhs twelve years from now. What single term would have to be invested now at an interest rate of 12% compounded annually, to provide these expenditures? (9)

Q. 3 Attempt any two.

a) Find out breakeven point analytically for following data:

1. Sale Rs. 1 lakh, 2. Direct material Rs. 20000/- 3. Direct labour Rs.10000/- 4. Variable overhead Rs. 10000/- 5. Fixed overhead Rs. 15000/- 6. Unit sale Rs.1.

Also indicate from breakeven point the effect of 10% rise in fixed cost. (9)

- b) Explain the concept Monte Carle simulation and decision tree analysis. (9)
- c) Discuss the concept of risk, its types and its assessment. (9)

Q.4 Following is the Balance Sheet of a limited company as on 31st March 2008. (16)

Liabilities	Rs.	Asset	Rs.
Equity Share Capital	2,00,000	Land and Building	1,40,000
Reserves & Surplus	70,000	Plant and Machinery	3,50,000
12% Debentures	4,20,000	Current Assets:	
Current Liabilities:		Stock in trade	2,00,000
Creditors	1,00,000	Debtors	1,00,000
Bills Payables	50,000	Bills Receivables	10,000
		Bank Balance	40,000
	8,40,000		8,40,000

Sales	4,00,000
Less: cost of goods sold	<u>3,75,000</u>
Gross Profit	25,000

Additional information:

1. Net Profit was Rs. 20,000,
2. opening stock of Debtors Rs. 125000,
3. opening stock of stock Rs. 185000

Calculate:

- a) Gross Profit Ratio
- b) Net Profit Ratio
- c) Current ratio
- d) Quick ratio
- e) Debt Equity ratio
- f) Inventory Turnover ratio
- g) Debtors Turnover ratio
- h) Debtors collection period

Q.5 Solve any one.

a. Write the different sources of short term financing for smooth conduct of day to day activities of the organisation. (16)

b. 'The Working capital needs of a firm are determined & influenced by various factors'. Do you agree? Justify. (16)

Q.6 a) Differentiate fund flow statement and cash flow statement. (8)

b) Explain the concepts used in site accounting. (8)

Enroll No	
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QP Code	EM356
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End Semester Examination May 2014
First Year M Tech Civil Structure, Semester-II
Advanced Design of Steel Structures
Course Code: CST 506

Day & Date : Thursday, 15/5/2014

Max Marks: 100

Time: 3 Hrs: 10 AM to 1 PM.

Instructions:

- i. All questions are compulsory
- ii. Figures to the right indicate full marks
- iii. Assume suitable data if necessary and mention it clearly
- iv. Use of IS 800:2007, IS 801:1975, IS 875 (Part 3)-1987, IS: 811- 1987, IS: 11384- 1985, IS Hand Book.

- 1 a A through type trussed girder bridge consists of two Pratt trusses. The effective span of truss is 50m divided equally into 10 panels of 5m each. The height of the truss is 6m. The dead load per girder is 15kN/m and live load (including impact) per girder is 75kN/m. Compute the design forces in the vertical member meeting at fifth panel point from left hand side support of the truss. 10
- b A propped cantilever of interior span L and overhang L/3 is subjected to a uniformly distributed load 'w' per unit run. Compute the ultimate load. 08
- OR**
- b A fixed beam of span 'L' is subjected to triangular load, zero at the left end to maximum 'w' at the right end. Compute the collapse load 08
- 2 a A continuous laterally supported beam ABC has span AB=6m and BC=3m. The beam carries a working load of 40kN/m over the entire length, inclusive of self weight. Design the section for flexure only. 10
- b A fixed base rectangular uniform portal frame of height and span L and full plastic moment M_p is subjected to a lateral udl 'w' per unit run on the column. Compute the value of w_u which would cause collapse. Draw BMD 08
- OR**
- b Compute the collapse load W_u for the rectangular portal frame ABCD fixed at A and D. AB=BC=CD=4m. The plastic moment for beam section is $1.5 M_p$ and that for column is M_p . It is subjected to horizontal load of W at B and vertical load of $1.5W$ at centre of beam. Draw BMD. 08
- 3 A roof of a building consists of 125mm thick RCC slab supported by rolled steel beam sections spaced at 3.65m centre to centre with effective span 10m. Consider a live load of 4kN/m^2 and a floor finish load of 1kN/m^2 . Grade of concrete is M20 and yield strength of the material of the steel beam is 250N/mm^2 . Assume that the propped method of construction is used. Design a composite beam. 16

- 4 Design a light gauge steel hollow rectangular column section with one of the outer dimension of section is 200mm. The axial load on the column is 125kN. The effective length of the column is 4m. 16
- 5 a A hollow rectangular section with outer dimensions, width=100mm and depth=50mm and thickness of metal=3.2mm is used as a beam of span 3m. Compute the safe UDL the beam can carry. 08
- b A symmetric gable portal frame ABCDE hinged at the supports, of span 30m, height of columns AB and ED is 5m and central rise is 5m is subjected to symmetric loading on gable beam BCD. Vertical concentrated loads of magnitude 250kN each are acting on portion BC at 2.5m, 7.5m and 10m from left column. Symmetrically portion CD is loaded. Find the value of M_p . Assume that hinge is to form at a point below the concentrated load near crown. 08
- OR**
- b A portal frame is subjected to a horizontal loading as shown in Fig 1. The two legs are fixed in the bottom. Prove that in the panel mechanism, the ultimate load is given by $6M_p/L$. 08
- 6 a Design a section for pre-engineered frame subjected to plastic BM=560kNm, Shear =70kN and axial compressive force=126kN. 10
- b A gable portal frame is subjected to DL=1.2kN/m, LL=3kN/m and WL=37.5kN at eaves level. All loads are at service condition. Using partial safety factors carry out the design load combinations as per IS: 800-2007. 06
- OR**
- b Why the pre-engineered buildings are becoming more popular over conventional steel buildings. 06

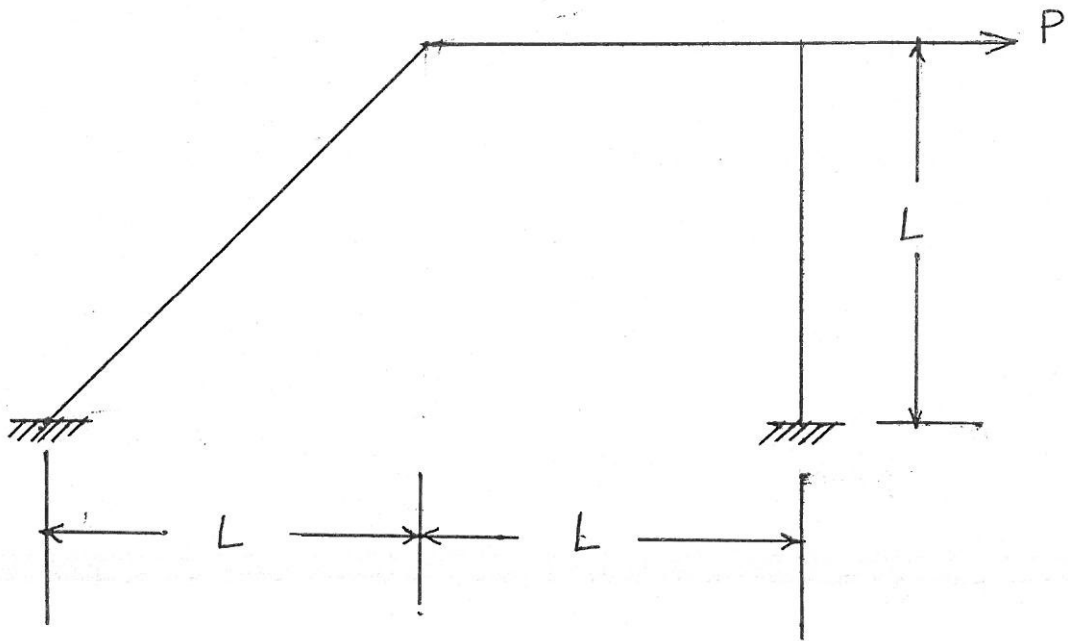


Fig 1 for Q.5 (b)

Enrollment No	
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Q.P. Code	EM373
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K.E.Society's
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End Semester Examination- May 2014
First Year M.Tech Civil (C&M) SEMESTER - II
Disaster Management CCM 512

Day and Date: Sat, 17.5.2014

Time: 12.00 am - 1.00 pm

Max Marks- 100

Instructions.

1. All Questions are compulsory.

2. Figures to the right indicate full marks.

Q1. The disaster management team has identified the risk of Tsunami in a coast XYZ. You are responsible for preparedness program. Design a suitable disaster management plan to minimize the damage as compared to tsunami 2005. 20

Q2. Attempt any two of the following : 18

a) 'Disaster management has undergone an enormous change in the recent times'.
Discuss.

b) What are the factors to be considered while planning the rebuilding works after a major disaster due to earthquake?

c) .Explain the following :

- i. Damage to housing during floods
- ii. Nutrition Centred Health Assessment

Q3. Illustrate the relationship between disaster and development with the help of examples from developed and developing countries. 16

OR

Estimate the contributions of GPS and GIS in disaster information management. Elaborate with suitable examples.

Q4. Attempt any two of the following : 16

a) Analyze the important facets of disaster management in mountainous regions.

b) Define Risk Assessment and formulate the methodologies for conducting risk assessment

- c) Enumerate the impacts of chemical disaster and discuss preparedness and response activities for disaster mitigation.

Q5. India has witnessed a shift from relief to mitigation and preparedness planning'. Discuss. 10

OR

Examine the inter linkages between disaster and recovery., " Justify.

Q6. Attempt any two of the following :

20

- a) Devise structural and non-structural mitigation measures in disaster management.
- b) 'Calamity Relief Fund is a major funding arrangement for reconstruction. Criticize
- c) Outline the role of Information Technology in disaster prevention.

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Rajaramnagar

Enroll. No	
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(An Autonomous Institute)
End Semester Examination

EM372

First Year M Tech. Civil Engineering SEMESTER II (structure)
Theory of Plates and Shells, Course Code(CST508)

Day & Date: ... Sat, 17.5.2014

Time: ... 10.00am - 1.00pm

Max Marks: 100

Instructions:

1. All questions are compulsory
2. Marks are reserved for neat diagrams at correct places
3. "Level of difficulty as per Bloom's Taxonomy.

Q.1 Write³ constitutive relationship for isotropic material in 16
a) 3D state in planes (x-y-z) b) Plane stress (x-z) c) Plane strain (x-z).

Q.2 Describe⁶ Levi's solution for SSCC and SSFF cases considering 18
boundary and loading conditions. Also explain why there is a need to
consider SS boundary condition for all cases of plates.

OR

Q.2 Compare⁶ in details Navier's solution with Levi's solution. Justify⁶ 18
Navier's solution is more appropriate for SSSS case in particular than
Levi's solution.

Q.3 a) Classify² various shells with neat diagrams. 08
b) A reinforced concrete circular cylindrical shell has radius 6 m, Span 24 08
m, Semi angle 40° , thickness 50 mm. Calculate maximum stress N_x due
to self weight only by membrane theory.

Q.4 Demonstrate³ with neat diagrams membrane and bending forces acting 16
on cylindrical shells (Draw separate figures). Also expected to
summarize⁵ expressions for stress resultants.

Q.5 For a cantilever open shell of length L of radius a and half angle ϕ , 18
find N_x , N_ϕ , $N_{x\phi}$ due to its own weight and demonstrate³ variations in
the forces.

OR

Q.5 Compute³ N_x , N_ϕ , $N_{x\phi}$ for a cylindrical shell simply supported at both 18
the ends due to its' own weight.

Q.6 a) Compute³ N_x at crown and at springing for circular cylindrical shells 08
without edge beams.

b) Compute³ N_x at crown and at springing for circular cylindrical shell 08
without edge beams for span 36 m, radius 9 m, semi central angle of 40° ,
thickness 0.075 m, for Dead Load as 1.80 and Live Load as 0.7 kN/m^2

Enrollment No	
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Q.P. Code	EM 386
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K.E.Society's
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End Semester Examination- May 2014
First Year M. Tech. Institute Elective SEMESTER - II
Value Engineering (IET506)

Day and Date: Tuesday, 20/5/2014
Time: 10 - 1 pm.

Max Marks- 100

Instructions:

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

Q.1 Attempt any two.

- a) Explain relevance of value engineering to Indian scenario. (8)
- b) Illustrate four situations where esteem value is more important than other values. i.e. cost value, use value and exchange value. (8)
- c) Find out value of any product / process / service with reference to mathematical model of value. (8)

Q.2 Attempt any two.

- a) Explain the importance of functional analysis in V.E. study with suitable example. (8)
- b) Prepare cost model / matrix for R.C.C. building or CNC machine or diesel engine or any other process or service. (8)
- c) Identify and explain with suitable example at least four reasons of poor value. (8)

Q.3 Attempt any two.

- a) Differentiate cost and worth with suitable example and identify worth of 'Thumps Up' bottle. (8)
- b) Explain creative phase in V.E. job plan with reference to any two examples. (8)
- c) Select V.E. team for analyzing mechanical/civil/computer engineering project and justify your selection of team members. (8)

Q.4 Attempt any two.

- a) Develop evaluation criteria for selecting product/process from your discipline. Justify your selection. (9)
- b) Compare above developed evaluation criteria on 1 to 3 scale with each other and find out raw score and weighted score on 1 to 10 scale. (9)

c) Formulate evaluation matrix and select best alternative from any three alternatives by calculating total score. (9)

Q. 5 Attempt any two.

a) Justify use of life cycle cost in V.E. (8)

b) Explain steps for computing LCC with suitable example. (8)

c) Explain at least four types of life cycle costs. (8)

Q.6 Explain in detail any one V. E. case study with reference to V. E. job plan. (18)

K.E.Society's,

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Enroll.
No.

(An Autonomous Institute, Affiliated to SUK)

Re Examination, June 14

S.Y B.TECH Civil Engineering SEMESTER-IV

Engineering Geology and Remote Sensing (CE208)

QP CODE RE403

Day & Date: Sat, 28/4/2014.

Time: 2:30 - 5:30 pm

Max Marks-80

- Instructions-
- i) All questions are compulsory.
 - ii) Figures to the right indicate full marks.
 - iii) Assume suitable data wherever necessary.
 - iv) Draw neat sketches wherever necessary.

- Q.2
- A. Explain in details internal structure of the earth with neat diagram. 08
 - B. Define mineral. Describe in detail Feldspar group of minerals. 06
 - C. Explain any two types of faults. 06
- Or
- C. Describe the Rock Cycle with neat diagram 06
- Q.3
- A. Explain the geological consideration for a good Reservoir. 08
 - B. Classify various types of landslides? Describe the internal causes of landslide. 07
- Or
- B. Explain different methods of drilling 07
 - C. Explain the requirement of good building stones with examples 05
- Q.4
- A. Describe in detail preliminary geological investigations carried out for any civil engineering project. 12
- Or
- A. Describe the elements of photograph interpretation. 12
 - B. Explain in detail the EMR Spectrum 08

Q.5 A. Explain the importance of core drilling for preliminary geological investigation for dam site with reference to following points. 12

- i) Core recovery.
- ii) Drill water loss.
- iii) Number of pieces of cores.
- iv) Rate of drilling.

B. Types of tunnels with examples. 08

Or

B. Define aquifer. Describe different types of aquifers. 08