	Enrol. No	

Rajarambapu Institute of Technology, Rajaramnagar
(An Autonomous Institute)

First Year M.Tech. Civil-Cont.mgt (SEMESTER – II) Examination, March.2012.   **MM064**

Construction Equipments (CEC-502)

Day & Date: Monday, 19/03/2012   Time: 03.00am to 05.00pm   **Max Marks- 50**

Instructions:
   i.   All questions are compulsory
   ii. Figures to the right indicate full marks
   iii. Assume suitable data wherever necessary
   iv. Use of non-programmable calculator, codes are allowed

Q. 1 (a) Draw a neat figure of dragline and explain operation in detail.   **06**

(b) With example explain the applications of clamshell.   **04**

(c) Tabulate stepwise process of constructing flexible pavement and enlist   **06**
equipments used for each process.

Q. 2 (a) Explain factors to be considered for calculating output of hauling   **08**
equipments.

OR

Calculate number of hauling equipments required to haul 150 M3 of bank
volume having 20% voids. if
   i.   Volume of hauling unit is 6M3
   ii. Vide ratio 40% when loose

(b) Discuss various methods of pile driving in loose soil. Explain the working   **08**
of diesel hammer.

Q. 3 (a) Enlist various compacting equipments. Discuss the suitability and   **06**
limitations of any one.

OR

Explain equipments involved in dredging operation.

(b) Explain with example applications and operation of vibratory hammer pile   **06**
driving equipment.

(c) Explain with sketch screening process in aggregate production.   **06**

Rajarambapu Institute of Technology, Rajaramnagar
(An Autonomous Institute)

Enrol. No	

First Year M.Tech. Civil-Str. (SEMESTER –II) Examination, March.2012.   **MM063**

Finite Element Analysis (CES-502)

Day & Date: Monday, 19/03/2012   **Time: 03.00am to 05.00pm**   **Max Marks- 50**

Instructions: i) Solve all questions
ii) Figures to the right indicate full marks
iii) Assume suitable data, if required and mention it clearly

Q.1. (a) Describe in brief, major steps in FEM   7

(b) State the principle of minimum potential energy with suitable example   9

Q. 2. (a) Derive element stiffness matrix for truss element by direct approach method   14

(b) Write properties of global stiffness matrix   3

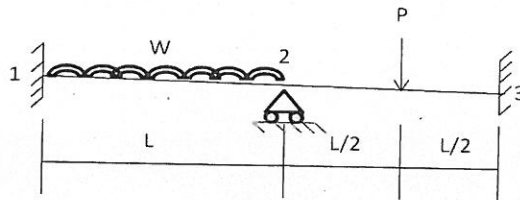Q.3. Analyse the beam shown in fig 1, by using FEM (w=10kN/m, P=40kN, L=4m)   17

Fig.1

OR

Q.3. For three bar assemblage shown in fig.2, find i) the assembled stiffness matrix
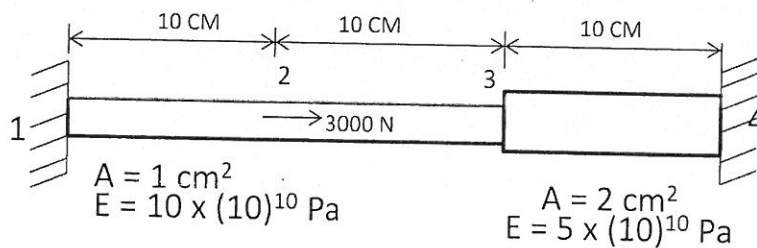ii) the displacement at node 2 and 3 iii) the reaction at node 1 and 4   17

Fig.2

Rajarambapu Institute of Technology, Rajaramnagar
(An Autonomous Institute)

Enrol. No	

First Year M.Tech.Civil- Const.Mgt (SEM. – II) Examination, March.2012.   **MM074**

Construction Contracts Administration & Management (CEC-504)

Day & Date: Tuesday, 20/03/2012   Time: 03.00am to 05.00pm   Max Marks- 50

Instructions:
    i.   All questions are compulsory
    ii.   Figures to the right indicate full marks
    iii.   Assume suitable data wherever necessary
    iv.   Use of non-programmable calculator, codes are allowed

Q. 1 (a) What is Tender? Enlist the points involved in preparing tender notice.   **08**
    (b) How the termination of the contracts takes place? Describe the ways of termination of contract in detail.   **08**
                            OR
    (c) Enlist the enclosures to be attached with filled tender at the time of submission and briefly describe them.   **08**

Q. 2 (a) Write short note on Sales of goods Act.   **08**
    (b) After receiving tenders in public sector, how are they scrutinized?   **08**

Q. 3 (a) Briefly describe the duties of Engineer appointed for the work towards various aspects.   **10**
    (b) Prepare a tender notice for the construction of primary school building.   **08**
                            OR
    (c) What are the important terms used in Arbitration? Explain each one of them in brief.   **08**

Enrol. No	

Rajarambapu Institute of Technology, Rajaramnagar
(An Autonomous Institute)

First Year M.Tech.Civil-Str. (SEMESTER – II) Examination, March.2012.   **MM073**

Advance Design of Concrete Structures (CES-504)

Day & Date: Tuesday, 20/03/2012   Time: 03.00am to 05.00pm   Max Marks- 50

Instructions: i) All questions are compulsory
ii) Figures to the right indicate full marks
iii) Use of IS: 456, IS: 1343 and IS: 3370 is allowed
iv) Use of non-programmable calculator is allowed

Q1 Design an interior panel 5mX5m of flat slab subjected to live load of $5KN/m^2$. Size of supporting columns is 400mmX 400mm square. Check for shear.   (16)

Q2 Design a combined footing for two columns, column 'A' 500mmX500mm and Column 'B' 500mmX500mm, 4m distance apart carrying loads of 800KN and 1000KN (at service load condition) respectively. The safe bearing capacity of the soil is $150KN/m^2$.   (17)

Q3 Design a wall of overhead circular water tank for a capacity of 2,50,000 liters. Design also top dome and top ring beam. Assume connection between wall and bottom slab as hinged connection.   (17)

OR

Q3 (a) A pretensioned beam 250mm wide and 300mm deep is prestressed by 12 wires each of 7mm diameter initially stressed to $1200N/mm^2$ with their cancroids located 100mm from the soffit. Estimate the final percentage loss of prestress due to elastic deformation, creep, shrinkage and relaxation using IS:1343 and the following data: Relaxation of steel stress= $90N/mm^2$, E_s= $210KN/m^2$, E_c= $35KN/m^2$, Creep coefficient= 1.6, Residual shrinkage strain=

$3x10^{-4}$.   (09)

(b) Design a prestressed slab having a span of 15m. It carries a superimposed load of $10KN/m^2$. Take losses at 18%. Allowable initial compressive stress is $17 N/mm^2$, final compress stress is $14N/mm^2$ and tensile stress is $1N/mm^2$.   (08)

Rajarambapu Institute of Technology, Rajaramnagar
(An Autonomous Institute)

Enrol. No	

First Year M.Tech. Civil –Stru. (SEMESTER –II) Examination, March.2012.   **MM084**
Earthquake Resisting Structures (CES-506)
Day & Date: Wednesday, 21/03/2012
Time: 03.00pm to 05.00pm   Max Marks- 50

Instructions-   i) All questions are compulsory.
ii) Figures to the right indicate full marks.
iii) Assume suitable data wherever necessary.
iv) Allow IS 1893.

Q. 01.   a) Differentiate between Magnitude and Intensity of earthquake? Classify the earthquake with the help of modified Mercalli's Intensity scale?   **08**

b) With the help of neat sketch, explain structure of Earth? Comment on movement of tectonic   plates?   **08**

Q. 02.   A three storied RCC framed building for hospital is to be constructed in Islampur city. Evaluate the lateral seismic forces acting on the structure. All beams and columns may be assumed to be of size 30 X 60 cm and 50 X 60cm respectively. Slab thickness is 20cm and external walls are 25cm thick. Floor height is 3.5 m. live load is 3.25 KN/m². The R. C. C. structure consists of 3 bays of 7m in both directions. Assume additional data if requires. Use equivalent Static method or Dynamic method   **18**

Q. 03. a) Write note on "Principles of Planning"?   **10**

b) What are different techniques for improving resistant to earthquake force for load bearing structures?   **06**

OR

b) Write a note on "weak beam- strong column" design philosophy?   **06**

-------- Good Luck ------------

	Enrol. No	

Rajarambapu Institute of Technology, Rajaramnagar
(An Autonomous Institute)

First Year M.Tech.Civil-Const.Mgt) (SEMESTER – II) Examination, March.2012.   **MM085**

Modern Construction Materials (CEC-506)

Day & Date: Wednesday, 21/03/2012
Time: 03.00pm to 05.00pm   Max Marks- 50

Time: 2Hrs

Instructions: i) Solve all questions
ii) Figures to the right indicate full marks
iii) Assume suitable data, if required and mention it clearly

Q.1. (a) What is the difference between waterproofing and damp-proofing? Describe briefly the basic components of waterproofing system. (8)

(b) Explain the difference between wrought iron, steel and cast iron. What are the distinguishing features of mild steel? Why is it easy to make cast iron castings? (8)

Q. 2. (a) What are plastics and how are they classified? Differentiate between thermoplastic and thermosetting materials. What are the advantages of commonly used PVC pipes over metal pipes? (10)

(b) What is self-compacting concrete? How its flowability is measured? (06)

Q.3. (a) What are chemical admixtures? Describe briefly the mechanism of superplasticizers in concrete. (10)

(b) What are the properties of FRP? Mention applications of FRP in building industry. (08)

OR

Q.3. (a) What is a Fibre Reinforced Concrete? What are the different types of fibers usually used in the construction industries? Explain the effects of fibres in concrete? What are the factors effecting properties of Fibre Reinforced Concrete. (18)

First Year M.Tech.Civil-Const.Mgt (SEM. –II) Examination, March.2012.   **MM095**

Advanced Construction Techniques (CEC-508)

Day & Date: Thursday, 22/03/2012

Time: 03.00pm to 05.00pm   Max Marks- 50

Instructions: i) Solve all questions

      ii) Figures to the right indicate full marks

      iii) Assume suitable data, if required and mention it clearly

Q.1   (a) What do you mean by vaccum dewatering for concrete flooring & enlist equipment required for the same?   08

    (b) Illustrate the procedure of vaccum dewatering flooring?   08

Q.2   (a) Compare different technique of construction of Tall Building   10

      1) Core wall construction (b) Climbing form 3) Slip form

    (b) Write case study of construction of tall building?   08

Q.3   (a) Explain different methods of demolition of structure?   08

    (b) Write short note on (Any One):   08

        1) Underpinning

        2) Cracks stabilization technique.

        3) Micro piling for strengthening of floor?

OR

Q.3. (a) Write application & advantage for V. D. F   08

    (b) Write short note on launching of girder?   08

Instructions:
    i. All questions are compulsory
    ii. Figures to the right indicate full marks
    iii. Assume suitable data wherever necessary
    iv. Use of non-programmable calculator, codes are allowed

Q. 1 (a) What is HRM? What are the functions and objectives?   **06**

(b) Discuss HRM and its environment with suitable illustration.   **06**

OR

Explain various steps in HR process.

(c) Explain the strategic management process.   **06**

Q. 2 (a) Explain the techniques of employee demand forecasting.   **04**

(b) Explain the barriers to HRP.   **06**

OR

Explain the Guest model of HRM.

(c) Bring out the factors which influence recruitment.   **06**

Q. 3 (a) What are the various theories of motivation? Reason one which you liked and why?   **06**

(b) Compare the Hersey-Blanchard leadership model with Vroom-Yetton's path goal model.   **06**

OR

How does conflict affect the working of groups? How to resolve

(c) Explain in details various stages in the formation of groups.   **04**

Rajarambapu Institute of Technology, Rajaramnagar
(An Autonomous Institute)

Enrol. No

First Year M.Tech. Civil –Stru. (SEMESTER – II) Examination, March.2012.   **MM104**

Elective-II Theory of Plates and Shells (CES-510)

Day & Date: Saturday, 24/03/2012
Time: 03.00pm to 05.00pm

Max Marks- 50

Q.1   (a) Write clearly assumptions made in Kirchhoff's Classical Plate Theory (CPT) and hence derive displacement field for the same.   (08)

(b) Derive equations of equilibrium based on CPT.   (09)

Q.2   (a) State Strain Curvature and Moment Curvature relationships   (04)

(b) Find Navier's solution for transverse displacement (w).   (13)

Q.3   (a) Derive q_{mn} for uniformly distributed load (udl)   (08)

(b) Differentiate clearly between Navier's and Levi's solution   (08)

OR

Q.3   (a) State and explain equilibrium equations for circular plate   (08)

(b) Derive solution for transverse displacement (w) for fixed circular

plate subjected to udl.   (08)

* * * * * * * * *

Rajarambapu Institute of Technology, Rajaramnagar

(An Autonomous Institute)

Enrol.
No

First Year M.Tech. Civil- Stru. (SEMESTER – II) Examination, March.2012.   **MM094**

Structural Design of Concrete Bridges (CES-508)

Day & Date: Thursday, 22/03/2012

Time: 03.00pm to 05.00pm   Max Marks- 50

Instructions   : – 1) All questions are compulsory

2) Draw neat sketches ,flow diagrams , block diagrams wherever Necessary

3) Use of IS-456 & IS-875 allowed

4) Figure to right indicates full marks

5) Assume any other data if necessary

Q 1   a) Define Economic span , Kerb, Afflux   6

b) Sketch different types of foundations adopted in bridge.   6

Q 2   a) State permissible values for design loads on bridges.   6

b) Design the deck slab from the following data   12

Clear span 6 m

Footpath 1.00 m on each side

Road width 7 m

Density of wearing coat 20 KN/sq m

Overall depth of slab not less than 400 mm

Wearing coat = 100 mm

D L moment = 24 KN-M , L L moment = 73 KN-M

D L Shear force = 22 KN, L L Shear force = 60 KN

M-20 & Fe-415

Use permissible values from IS book

Q 3   a) Explain Dispersion length , Pigeaud's & Coubbon's Theory   9

b) Find the linear water way & from following data in T- beam bridge   11

Flood discharge - 40 cu m/s

Bed width = 12 m , Road width = 7 m , side slope 1 : 1

Max allowable Afflux = 1.25 cm

IRC Class AA load with National highway, tracked vehicle

Longitudinal girders 03 & cross girders at 2.50 m

OR

Q 3 Design the interior panel for slab For above problem in Q No 3 by using
following additional data.   20
M-25 concrete & Fe-415 steel
Dead load = 18 KN/Sq M
Unit weight of soil = 21 KN /Sq M
Max moment for top & bottom slab = 70 KN-M
Direct force = 40 KN
Max moment at mid of wall = 35 KN-M
Ultimate axial Thrust = 2 KN
Angle of repose = 30 degrees
Use B/L = 2.60 , non- Perennial stream