COLLEGE OF ENGINEERING, PUNE
M. Tech (Civil) Town and Country Planning
End Semester Examination

Environment and Land Use Planning

Day & Date: - Monday 21 November 2011 Time: 4pm to 7pm

Max. Marks: 50. Duration: Three Hours

Instructions to Candidates:

1. Answer all questions.
2. Neat diagrams must be drawn wherever necessary
3. Assume suitable data if necessary
4. Figures to the right indicate full marks
5. Use of non-programmable calculators is allowed

SECTION I

Que: 1 Explain in detail about 'Climate Responsive Land use Planning' with appropriate examples with respect to any Two Climatic zones. **(9)**

Que: 2 What is EIA? Explain its importance in urban planning process with the help of any one physical planning proposal and its EIA. **(8)**

Que: 3 Write Short Notes On: **(8)**

a) Municipal Solid Waste Management
b) Kyoto Protocol

SECTION II

Que:4 What is the Impact of advanced agricultural methods Urbanization & industrialization on nature? Explain in Detail. **(9)**

Que:5 Explain the principles of Land Use Planning and strategies for Land Use Planning. **(8)**

Que:6 Scope and necessity of Environmental Management in town planning. **(8)**

COLLEGE OF ENGINEERING, PUNE

M. Tech Town and Country Planning

End-Semester Examination November 2011

History and Theory of Urban Planning

Time: 3 Hours | Max. Marks: 50

Day & Date: Saturday 19 Nov2011 | Time: 4 pm to 7 pm

Instructions to Candidates:

1) Section I - Answer two questions from Q. 1 to Q. 3; Q.4 is compulsory
2) Neat diagrams must be drawn wherever necessary
3) Assume suitable data if necessary
4) Figures to the right indicate full marks
5) Use of non-programmable calculators is allowed

SECTION I

Q-1. a) Explain factors responsible for the location, development and evolution of any city. (4)

b) What are different types of towns according to the shapes in Mansara Vastushatra. (4)

Q-2. Describe and distinguish the Roman and Greek ways of city planning with sketches and state the lesson we learnt from it. (8)

Q-3. Explain in detail Industrial Revolution considering all aspects and the effects of Industrial Revolution. (8)

Q-4. Write short notes on the following:- (9)

a) C.A. Doxiadis
b) Concept of Satellite town
c) Clarence Perry

SECTION II

Q-5. Describe and explain theories of land use planning. (10)

Q-6. Write short notes on *any three* of the following:- (15)

a) Urban geography and location of Human Settlement
b) Urban Functions and Urban Settlement
c) Significance of Demographic Data in Planning
d) Zones, Uses and activities in Landuse Planning
e) Cohort Survival Method of Population Forecasting

end

November 2011

COLLEGE OF ENGINEERING, PUNE

M. Tech Town and Country Planning

End Semester Examination (Semester I) November 2011

Transportation and Infrastructure System Planning

[Time: 3 hours] [Max. Marks: 50]

Instructions to Candidates:

Neat Diagrams must be drawn wherever necessary.
Use of Non programmable calculator is allowed.

SECTION I

Answer any ***four*** questions from section I

Q 1. (a) Explain with graphs the service functions and demand functions of an Activity-Transportation system. [2]

(b) How the above said service functions and demand functions are used for estimating Flows in the transportation system? [2]

(c) Explain with a graph the concept of induced demand as a short-term effect of improvements to Transportation System. [3]

Q.2. (a) What is Traffic Calming? Where and why is it used? [2]

(b) How are the tools of Traffic Calming classified functionally? [2]

(c) Which physical similarities are used to classify speed control measures in Traffic Calming? Describe any two out of these speed control measures. [3]

Q.3. (a) List out at least five important surveys required for preparing Transportation Plan of a metropolitan area. [2]

(b) Specify names and order of the sub-models involved in the conventional four-step model used for transportation planning. Describe the function of these sub-models. [2]

(c) Describe the structure of any one of these sub-models. [3]

Q.4. Write short notes on any three: — [7]

(i) Traffic Analysis Zone (TAZ)
(ii) Transportation Demand Management (TDM)
(iii) Transit Oriented Development (TOD)
(iv) Left-Right Offset Priority Junction
(v) Haddon's Matrix

Q.5. Explain with neat sketches (any three) — [7]

a. Safe Stopping Sight Distance.

b. Horizontal Curves.

c. Super elevation.

d. Transition curves.

e. Vertical curves.

SECTION II

Q 4 What type of disposal of Sewage do you propose for the following? (12)
A) Rural area B) Factory employing 100 Person (along with their residential quarters in an urban area).

Describe sludge digestion process in brief.

Q 5 What do you understand by per capita demand? In a town or a city for what purposes generally water is required. (10)

OR

Q 5 What do you mean by solid waste management (SWM). What are the different methods for Solid waste management (SWM). (10)

COLLEGE OF ENGINEERING, PUNE

M. Tech. (Civil) (Town and Country Planning)
End-Semester Examination (Semester - I) November - 2011

(CE 5418) Remote Sensing & Geographic Information System

Day & Date: Sunday & 27th November, 2011 [Max. Marks: 50]

[Time: 3 Hours] Time: 4 to 7 pm

Instructions to Candidates:

1) Answer *all* questions from Section - I and Section – II
2) Neat diagrams must be drawn wherever necessary
3) Assume suitable data if necessary
4) Figures to the right indicate full marks
5) Use of non-programmable calculators is allowed

Section - I : Remote Sensing

Q-1. Write short note on followings (**any three**) (15)

a) Technical Specifications of LANDSAT Satellite Programme

b) Spatial Resolution and Pixel Size

c) Classification of Remote Sensing Process

d) Microwave Remote Sensing

e) Elements of Aerial Photo Interpretation

Q-2. Write a detail note on Digital Image Processing and Analysis. (10)

Section - II : Geographic Information System

Q-3) Write short note on followings (**any two**) (8)

a) Vector Data Model with examples

b) Types of Attribute Data by measurement scale

c) Geodatabase Data Format

d) Join and Relate

Q-4) Explain with diagrams buffering technique and overlay analysis (8)

Q-5) Define GIS? Explain the components of GIS? (9)

OR

Describe the spatial data query techniques?

----*End*----

COLLEGE OF ENGINEERING, PUNE

M. Tech. (Civil) (Town & Country Planning)

End-Semester Examination (Semester - I) November 2010

(CE 5411) Planning Administration and professional Practice

Day & Date: Tuesday, 29th November, 2011 Time: 4 to 7 pm

[Time: 3 Hours] [Max. Marks: 50]

Instructions to Candidates:

1) Answer any ***three*** questions from Section-I and all questions from Section-II
2) Neat diagrams must be drawn wherever necessary
3) Assume suitable data if necessary
4) Figures to the right indicate full marks
5) Use of non-programmable calculators is allowed

Q-1. Explain the characteristics of effectively good urban local governance in functioning and development process of urban local bodies. What are the benefits of E-governance? (10)

Q-2. Discuss the problems and issues of metropolitan management with relevance to a metropolitan area. (10)

Q-3 Discuss the broad features of Kerala Development Model of Participatory Planning and its utility for application elsewhere. (10)

Q-4. Discuss the management aspects of managing a project. (10)

Q-5. Discuss the importance of human resources skills and technology in development as also impacts of Information technology sector on development process of cities and its implications on quality of life of rich and poor. (10)

Q-6. What is the relevance and importance of study of settlement structure in a Regional Plan? (10)

Q–7. Write short notes on any two. (10)

a) Planning Programming and Budgeting (PPB) in a development prospect.

b) Concept of City Development Plan (CDP) as against Comprehensive Master Plan or Development Plan.

c) Shortage of qualified skilled trained Spatial Planners; Manpower Planning.

d) Resource Mobilization for action plan.

----- End -----

COLLEGE OF ENGINEERING, PUNE

M. Tech. (Civil) (Town and Country Planning)

End-Semester Examination (Semester - I) November – 2011

Quantitative Techniques

Day & Date: Friday, 25th November, 2011 [Max. Marks: 50]

[Time: 3 Hours] Time: 4 to 7 pm

Instructions to Candidates:

1) Attempt **any four questions** from followings
2) Neat diagrams must be drawn wherever necessary
3) On request, statistical tables will be provided
4) Assume suitable data, if necessary
5) Use of non-programmable calculators is allowed

Question 1 **(12 marks)**

The increase in traffic and narrow roads prompted Pune Municipal Commissioner to enforce a speed limit of 40 km/hr for all the vehicles. In order to decide planning strategies, and enforcing traffic rules, one of the useful study on *violation of speed limit* was carried out by M. Tech students of Civil Engineering, COEP. In order to get a birds eye view of the problem, the students initially measured the speed of only 36 vehicles, randomly, and assumed that this data could follow normal population. First, express the observations as a Box Whisker Plot.

Data: (Speed in km/hr)

25, 20, 45, 80, 100, 25, 82, 32, 60, 62, 20, 22, 29, 24, 36, 18, 77, 52, 48, 47, 110, 35, 38, 82, 105, 18, 56, 102, 80, 19, 73, 24, 44, 30, 36,35.

The Municipal Authorities were keen to know about the speed violation. Calculate and justify the computational procedure. Also, suggest recommendations to PMC, if any,

Question 2 **(12 marks)**

A large portion of contaminated soil samples (expressed in units) was collected and divided into 32 identical aliquots and were sent to *four laboratories* for testing. Are laboratories making consistent measurements?

Lab1	26.1	21.5	22.0	22.6	24.9	22.6	23.8	23.2
Lab2	18.3	19.7	18.0	17.4	22.6	11.6	11.0	15.7
Lab3	19.3	13.9	15.7	18.6	19.1	16.8	25.5	19.7
Lab4	30.7	27.3	20.9	29.0	20.9	26.1	26.7	30.7

Question 3 **(14 marks)**

A] Polluted water is one of the causes of water borne diseases if someone consumes that water. Suppose the ages at times of onset of a certain water borne disease are approximately normally distributed for the data given below (in years):

12, 13, 8, 5, 9, 6, 12, 10. 11, 10

After medication a child has just recovered from the diseases. Find the probability that the child is: a] Between the ages of 7.5 and 10.5 years

b] Over 10 years of age.

While writing the solution, explain the procedure with sufficient reasoning,, and assumptions made, if any.

B] PCMC has embarked upon a plan of installing universal water metering without ascertaining the status of over 100,000 existing water meters. You are asked by the Commissioner to estimate the percentage of water meters which are out of order. In pilot study, it was observed that 20% of water meters are non functional. A sample survey needs to be carried out to achieve the desired objective. Determine the sample size which ensures maximum error of 1% at 5% level of significance, α.

Question 4 **(12 marks)**

A] Compute appropriate mean value for the data set and estimate the outlier. Please mention logical assumptions, if any. (3 marks)

Parameter	Jan	Feb	Mar	April	May	June	July	August
BOD(mg/l)	25.0	2.0	5.0	40.0	10.0	12.0	18.0	15.0
Velocity (m/s)	0.8	1.0	1.2	0.7	0.9	1.1	1.3	1.4

B] The attack rate of small pox among the vaccinated against the not vaccinated are given below. Prove the protective value by χ^2 – test. (9 marks)

Group	Result		Total
	Attacked	Not Attacked	
Vaccinated	10	30	40
Not vaccinated	10	70	80

Question 5 **(12 marks)**

A] What is accuracy in statistical terms?

B] It was observed in the first Indian Metro railway construction project in Kolkata (1980) that there was unusual SPM (Suspended Particulate matter) concentration level between 6 hrs till 22hrs pm at the air quality monitoring station located in Esplanade area. You are expected to plot the data using one of the smoothing methods. Also, comment on the results. The results are expressed: Time in hrs (first row), and SPM concentration (second row) in μg/m3:

6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
8	14	60	1520	1460	1290	1000	300	100	90	80	1800	1600	1540	100	50

Question 6 **(12 Marks)**

Explain (any three)

a) Rank Order and Karl Pearson's sample correlation coefficient

b) Lukring variables and Happenstance data

c) ANOVA and student t test

d) Stratified sampling

Question 7 **(12 Marks)**

Assuming uninterrupted power supply, the following three sub systems must work for the Pumping system (PSys)to be functional: 1. The pumps (P), 2. Electric motors (EM), and 3. Pipe lines (PL). From the manufactures data , these subsystems are known to have probability of failure over the time period of interest and at the reactor operating conditions of Pr (P)=0.02, Pr(EM)= 0.04 and Pr(PL) 0.01 and are known as marginal probabilities. What is the probability that it was the EM that failed during reactor operation (based on a test program)?

Suppose we learn that:

--When P fails /PSys fails with p=0.10 :

--When EM fails /PSys fails with p=0.15:

--When PL fails /CMS fails with p=0.10:

[Known as conditional probabilities]

----End----