



UNIVERSITY OF THE PUNJAB

Part-II A/2016
Examination:- M.A./M.Sc.

Roll No.

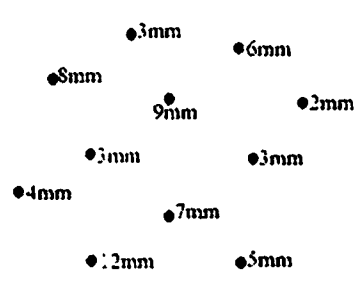
Subject: Mountain Conservation and Watershed Management
PAPER: I (Database Management Information System & Applications
of Remote Sensing and Geographical information System)

TIME ALLOWED: 3 hrs.
MAX. MARKS: 75

NOTE: Attempt only FIVE questions. Question # 1. (objective) is compulsory. Attempt at least TWO questions from each section. All questions carry equal marks.

Q.1	<u>Objective</u>	8+7=15 (08)
	a) Fill in the blanks with appropriate answer.	
1	Most relational DBMSs support _____ Language.	01
2	A relation is in _____ if and only if it is in _____ NF and every non-key attribute is irreducibly dependent on the primary key.	01
3	A diamond in ERD represents _____.	01
4	All attributes must have _____ value.	01
5	The procedure of reconciling the positions of corresponding features in different data layers is called _____.	01
6	Two most commonly used terrain parameters are the _____.	01
7	Addition, Subtraction, Multiply and divide are called _____ operators.	01
8	Direction of a slope surface is called _____.	01
	b) Mark "✓" against the correct statement and "×" against the wrong statement.	07
9	All data values in attributes are not atomic.	01
10	In a relational database, the foreign key of a relation would be the primary key of another relation.	01
11	EquiJoin and OuterJoin are same.	01
12	The procedure of reconciling the positions of corresponding features in different data layers is called conflation.	01
13	The principle of spatial overlay is to compare the characteristics of the same location in three data layers.	01
14	MODIS and Sea WIFS sensors having finer spectral characteristics are very effective to analyze the temporal changes of vegetation dynamics over regional and continental scale.	01
15	Conical one standard and two standard parallel projections are useful to show narrow strip of land running along the standard parallels in the north-south direction.	01

SECTION-I : Database Management Information System(DBMS)																																																																																												
Q.2	i. Differentiate between privacy, security, correctness and integrity of a database? ii. What is referential integrity? iii. What is meant by generalization? iv. What is meant by aggregation? v. What do you mean by base and derived relation?	3*5=15																																																																																										
Q.3	i. What is E-R model? What are the various symbols used to draw E-R diagram? ii. Explain the following relationships with examples <ul style="list-style-type: none"> • One to one • One to many • Many to many 	7+8=15																																																																																										
Q.4	i. Define Normalization? Why normalization is carried out? ii. Define partial dependency and full dependency? iii. Normalize the given table. <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th>Project Code</th> <th>Project Name</th> <th>Project Manager</th> <th>Project Budget</th> <th>Employee No.</th> <th>Employee Name</th> <th>Department No.</th> <th>Department Name</th> <th>Hourly Rate</th> </tr> </thead> <tbody> <tr> <td>PC010</td> <td>Reservation System</td> <td>Mr. Ajay</td> <td>120500</td> <td>\$100</td> <td>Mohan</td> <td>D03</td> <td>Database</td> <td>16.50</td> </tr> <tr> <td>PC010</td> <td>Reservation System</td> <td>Mr. Ajay</td> <td>120500</td> <td>\$101</td> <td>Vipul</td> <td>D02</td> <td>Testing</td> <td>16.50</td> </tr> <tr> <td>PC010</td> <td>Reservation System</td> <td>Mr. Ajay</td> <td>120500</td> <td>\$102</td> <td>Riyaz</td> <td>D01</td> <td>IT</td> <td>22.00</td> </tr> <tr> <td>PC011</td> <td>HR System</td> <td>Mrs. Charu</td> <td>500500</td> <td>\$103</td> <td>Pavan</td> <td>D03</td> <td>Database</td> <td>17.00</td> </tr> <tr> <td>PC011</td> <td>HR System</td> <td>Mrs. Charu</td> <td>500500</td> <td>\$104</td> <td>Jitendra</td> <td>D02</td> <td>Testing</td> <td>17.00</td> </tr> <tr> <td>PC011</td> <td>HR System</td> <td>Mrs. Charu</td> <td>500500</td> <td>\$105</td> <td>Pooja</td> <td>D01</td> <td>IT</td> <td>23.50</td> </tr> <tr> <td>PC012</td> <td>Attendance System</td> <td>Mr. Rajesh</td> <td>710700</td> <td>\$127</td> <td>Rahul</td> <td>D03</td> <td>Database</td> <td>16.50</td> </tr> <tr> <td>PC012</td> <td>Attendance System</td> <td>Mr. Rajesh</td> <td>710700</td> <td>\$218</td> <td>Avneesh</td> <td>D02</td> <td>Testing</td> <td>15.50</td> </tr> <tr> <td>PC012</td> <td>Attendance System</td> <td>Mr. Rajesh</td> <td>710700</td> <td>\$109</td> <td>Vikas</td> <td>D01</td> <td>IT</td> <td>20.50</td> </tr> </tbody> </table>	Project Code	Project Name	Project Manager	Project Budget	Employee No.	Employee Name	Department No.	Department Name	Hourly Rate	PC010	Reservation System	Mr. Ajay	120500	\$100	Mohan	D03	Database	16.50	PC010	Reservation System	Mr. Ajay	120500	\$101	Vipul	D02	Testing	16.50	PC010	Reservation System	Mr. Ajay	120500	\$102	Riyaz	D01	IT	22.00	PC011	HR System	Mrs. Charu	500500	\$103	Pavan	D03	Database	17.00	PC011	HR System	Mrs. Charu	500500	\$104	Jitendra	D02	Testing	17.00	PC011	HR System	Mrs. Charu	500500	\$105	Pooja	D01	IT	23.50	PC012	Attendance System	Mr. Rajesh	710700	\$127	Rahul	D03	Database	16.50	PC012	Attendance System	Mr. Rajesh	710700	\$218	Avneesh	D02	Testing	15.50	PC012	Attendance System	Mr. Rajesh	710700	\$109	Vikas	D01	IT	20.50	5*3=15
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Q.5	i. Define foreign key? How does it play a role in the join operation? ii. Discuss the various type of joins? Why these are join required. Give an example for all types.	7+8=15																																																																																										
SECTION-II: Remote Sensing and Geographical Information System (RS/GIS)																																																																																												
Q.6	Define the following terms: <ol style="list-style-type: none"> i. Image interpretation ii. Interpolation iii. Zenithal projections iv. Drainage System v. Visual hierarchy 	3*5=15																																																																																										
Q.7	Differentiate the following terms: <ol style="list-style-type: none"> i. Spread and seek computation ii. Radiometric and Spectral resolutions iii. Holography and Photography 	5*3=15																																																																																										

Q.8	<p>Write a note on the following:</p> <ol style="list-style-type: none"> Types of interpolation Buffer analysis Stereoscopic techniques 	5*3 =15																																																																											
Q.9	<p>(i) Define Thiessen interpolation. Create Thiessen polygons on the following rainfall data.</p> <div style="text-align: center;">  </div> <p>(ii) Perform the raster overlay operation by using the arithmetic operator (+).</p> <p>Output Map = Map A + Map B</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <table border="1" style="border-collapse: collapse; text-align: center;"> <caption>Map A</caption> <tr><td>4</td><td>4</td><td>4</td><td>3</td><td>3</td></tr> <tr><td>4</td><td>4</td><td>2</td><td>3</td><td>3</td></tr> <tr><td>5</td><td>4</td><td>4</td><td>8</td><td>8</td></tr> <tr><td>7</td><td>7</td><td>8</td><td>8</td><td>8</td></tr> <tr><td>7</td><td>7</td><td>7</td><td>8</td><td>8</td></tr> </table> + <table border="1" style="border-collapse: collapse; text-align: center;"> <caption>Map B</caption> <tr><td>3</td><td>3</td><td>3</td><td>7</td><td>7</td></tr> <tr><td>3</td><td>3</td><td>2</td><td>2</td><td>2</td></tr> <tr><td>3</td><td>2</td><td>2</td><td>7</td><td>5</td></tr> <tr><td>9</td><td>9</td><td>9</td><td>5</td><td>5</td></tr> <tr><td>9</td><td>9</td><td>9</td><td>5</td><td>5</td></tr> </table> </div> <p style="text-align: center; margin-top: 10px;">Output Map</p> <div style="display: flex; align-items: center; justify-content: center; margin-top: 10px;"> = <table border="1" style="border-collapse: collapse; width: 100px; height: 100px;"> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </table> </div> <p>(iii) Describe the linear and non linear techniques of a satellite image enhancement.</p>	4	4	4	3	3	4	4	2	3	3	5	4	4	8	8	7	7	8	8	8	7	7	7	8	8	3	3	3	7	7	3	3	2	2	2	3	2	2	7	5	9	9	9	5	5	9	9	9	5	5																										3*5 =15 5 5
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Part-II A/2016
Examination:- M.A./M.Sc.

Subject: Mountain Conservation and Watershed Management
 PAPER: II (Sustainable Development)

TIME ALLOWED: 30min
 MAX. MARKS: 15

Attempt this Paper on this Question Sheet only.

NOTE: Attempt all questions. Justify each question with suitable answer. Avoid overwriting and discussion of unwanted data as it will be considered depressingly.

Section – A (Mandatory)

Q.1. A) Fill in the blanks with suitable word/s. (5)

- i. _____ meets the needs of present tourist and host regions while protecting and enhancing opportunities for the future.
- ii. _____ is an overarching term used to describe responsible travel practices that focus on economic, socio-cultural, and environmental sustainability.
- iii. The term _____ was formally launched in the marketplace at the First International Ecotourism Forum and Field Seminar held in 1994 at Maho Bay Camp in the U.S.
- iv. Educating females reduces _____, hence facilitates progress towards sustainability.
- v. _____ is the development of products and processes that contribute to sustainable development, applying the commercial application of knowledge to elicit direct or indirect ecological improvements.

B) Mark as True / False (5)

- i. The World Resources Institute estimates that while general tourism is growing by 4% pa, nature-based tourism is increasing at a rate between 10% and 30% pa. T / F
- ii. Inbound tourism involves residents traveling in another country. T / F

P.T.O.

- iii. Allocentric travelers will need a greater amount of caring and assurances. T / F
- iv. The job of a good tourism security professional is not to solve a security lapse once it has occurred, but to prevent the misfortune from ever occurring. T / F
- v. Chapter 36 of Agenda 21 is about Promoting Education, Public Awareness and Training. T / F

C) Choose the correct option. (5)

- i. The word *tour* is derived from the _____ word, 'tornare'.
 (A) Greek (B) German (C) French (D) Latin
- ii. The member of a local community who provides the recreation services to the tourists is known as;
 (A) Local vender (B) Tour operator (C) Local guide (D) Stakeholder
- iii. On the scale of customer need in tourism _____ is/are second only to physiological needs.
 (A) Safety and security (B) Accommodations (C) Transport (D) Hunger
- iv. This function of land resource ensures human health by minimizing toxic substances in water, soils and plants, or hazards such as landslides, flash floods, etc.
 (A) Productive functions (B) Physiological functions (C) Cultural functions
 (D) Ecological function
- v. This circle of sustainability deals with the production & resourcing, exchange & transfer, consumption & use, wealth & distribution.
 (A) Economics (B) Ecology (C) Politics (D) Culture

UNIVERSITY OF THE PUNJAB



Part-II A/2016
Examination:- M.A./M.Sc.

Roll No.

Subject: Mountain Conservation and Watershed Management TIME ALLOWED: 2 hrs. & 30mins.
PAPER: II (Sustainable Development) MAX. MARKS: 60

Attempt this Paper on Separate Answer Sheet provided.

NOTE: Attempt at least TWO questions from each section. All questions carry equal marks.

Section – B (Ecotourism)

- Q1. a. What are the different forms of tourism? Discuss the characteristics of these forms. 7
b. Describe the positive and negative impacts of tourism. 8
- Q2. a. Give an account on the negative effects of tourism in Pakistan. 8
b. Describe the efforts of Pakistan government to address the ecotourism issues at the micro-economic and macro-economic level. 7
- Q3. a. Discuss in detail the characteristics of a good Ecotour. 8
b. How do Ecotour operators contribute in conserving the eco-destination? 7
- Q4. a. Explain the factors of Green Travel. 8
b. How is customer service important in Ecotourism industry? 7

Section – C (Sustainable Development)

- Q1. a. Discuss population growth as one of the major barrier to SD. 7
b. How is governance, a challenge for sustainable development? 8
- Q2. a. What is SD? How can education for SD help in bringing sustainability? 8
b. Explain the barriers to Education for sustainable development (ESD). 7
- Q3. a. Women are the key contributor in the sustainable management of environment. Discuss. 7
b. Describe the relationship of three pillars of SD with the role of women. 8
- Q4. a. In the challenge of common pool resources, Ostrom makes the case for adaptive governance as a method for the management. Discuss. 7
b. How do renewable energy resources ensure sustainable development? 8



UNIVERSITY OF THE PUNJAB

Part-II A/2016
Examination:- M.A./M.Sc.

Roll No.

Subject: Mountain Conservation and Watershed Management
PAPER: III (Environmental Impact Assessment and Research Methods and Techniques)

TIME ALLOWED: 3 hrs.
MAX. MARKS: 100

- Attempt any FIVE questions.
- Question Number ONE (Objective) is compulsory. Attempt at least TWO questions from each section of Subjective.
- Write to the point with the clear concept.

OBJECTIVE

Q.1 (a) Each question has four options. Encircle the correct answer:

[10]

- EIA is an important management tool for improving the projects of:
 - Short-term viability
 - Continuous viability
 - Long term viability
 - None of the above
- Formal review system of EIA reports established by:
 - Project proponents
 - NGOs
 - Government
 - Local community
- The project proponents usually include:
 - Government
 - Private sector companies and NGOs
 - Government ministries, departments, private sector companies and development agencies
 - Private sector companies, departments, ministries only
- The benefits of EIA include:
 - Improving project design and reducing costs
 - Considering alternative project designs
 - Addressing trans-boundary issues
 - All of the above
- Types of descriptive research methods are;
 - Survey
 - Historical
 - Case study
 - All three above
- Stratified sampling is used when;
 - Homogeneous groups are present
 - Clusters are present
 - Heterogeneous groups are present
 - All three are present
- Theory of "memory" addresses;
 - Applied research
 - Analytical research
 - Basic research
 - None of above
- The terms 'impact assessment' and 'environmental impact assessment' are umbrella terms frequently used to cover a broad range of techniques, e.g.
 - Social impact assessment (SIA)
 - Risk assessment (RA)
 - Environmental impact assessment (EIA)
 - All of above
- Terms of Reference (ToR) are normally prepared:
 - Before Screening
 - After Screening
 - Before Scoping
 - After Scoping
- Participant observations are used in;
 - Conceptual research
 - Qualitative research
 - Quantitative research
 - All of above

(b) Write whether the statement is true or false:

[05]

- EIA is not better development, it is a tool for anti-development **True/False**
- It is rare for a project to be rejected outright at the screening stage. **True/False**
- Scoping, sometimes referred to as preliminary assessment **True/False**
- Science refers to a non-systematic and un-organized body of knowledge in any area of inquiry that is acquired using "the scientific method". **True/False**
- Applied sciences, also called pure sciences, are those that explain the most basic objects and forces, relationships between them, and laws governing them. **True/False**

(c) Fill in the blanks:

- i. There are three types of boundaries to be considered in an EIA study: spatial, temporal and-----
- ii. Savings in capital and operating costs _____ be achieved by implementing EIA.
- iii. EIA requires three documents: Environment Impact Assessment, Environment Management Plan and _____
- iv. Depending on the purpose of research, scientific research projects can be grouped into three types: exploratory, descriptive, and _____.
- v. When more than one research methods are used in a single study it is called _____ method research.

SUBJECTIVE**Section I: Environmental Impact Assessment (EIA)**

- Q.2 a) Define the following terms: (6)
Environment Impact Assessment (EIA); Stakeholder; Environmental Component; Term of Reference (ToR); Environmental Impact Statement (EIS), Initial Environmental Examination (IEE)
- b) Describe the role of EIA in different levels of development planning for sustainable development of Pakistan? (6)
- c) Explain in detail the Leopold Matrix which is the best known matrix methodology for predicting the impact of a project on the environment for the Pulp and Paper Industry?(8)
- Q.3 a) Give short answer with clear concept: (6)
i. What is an environmental monitoring program?
ii. What are different types of scales commonly used in EIA methods
iii. Write the typical headings of an Environmental Impact Statement (EIS)
- b) List down the negative impacts identified in EIA of Dasu Hydropower Project during the pre-construction, construction and operational phase (8)
- c) Briefly explain the legal, institutional and regulatory framework for EIA in Pakistan? (6)
- Q.4 a) Differentiate between the following terms: (6)
i. Checklists and Matrices
ii. Procedural Guidelines and Sectoral Guidelines
iii. Formal Review and Stakeholder Review
- b) Describes the Pakistan National EIA categorization of proposed projects in different sectors requiring an EIA and IEE? (6)
- c) Prepare the environmental check-list required in the areas of environmental concern which should be considered in the planning, design, operation, and management of irrigation, drainage, and flood control projects for watershed management and development in mountain region (8)
- Q.5 a) Give short answer with clear concept: (6)
i. Enlist the methods for Environmental Impact Assessment?
ii. What is significant application of GIS in EIA
iii. What are the different objective criteria to determine the appropriateness of the methods for application in developing countries
- b) Explain in detail steps for physical and mathematical modeling for prediction of changes in environment? (6)
- c) Describes the EIA processes with the help of flow diagram. (8)

Section II: Research Methods and Techniques (RMT)

- Q.6 a) Define the following terms: (8)
i. Write according to APA style.
Ruth Few, Flooding, vulnerability and coping strategies: local response to global threat. Progress in Development Studies. Vol 3, no 5, pp 43-58(2003).
- ii. State four differences of data collection tools between qualitative and quantitative research.
- iii. Give two examples of conceptual research.
- iv. Differentiate between primary and secondary sources of literature.
- b) What is descriptive research? State four types of descriptive research. (6)
- c) Explain probability sampling. (6)

- Q.7** a) Give short answer with clear concept: (6)
- i. Write the criteria of good research
 - ii. What is the motivation in research
 - iii. What is co-relational research?
- b) Differentiate between Descriptive and Empirical research, giving one example each. (6)
- c) Describe, in brief, the layout of a research report, covering all relevant points. (8)
- Q.8** a) Give short answer with clear concept: (6)
- i. State different type of variables.
 - ii. What does a measure of central tendency indicate?
 - iii. Differentiate between conceptual and Empirical research.
- b) Describes the Ethics of researcher and research (6)
- c) Briefly describe the different steps involved in a research process with the help of flow diagram to make research proposal for M.Sc. Research Project? (8)
- Q.9** a) How a working hypothesis can be developed. Explain. (10)
- b) Briefly explain the following; (10)
- i. Simple random sampling
 - ii. Systematic sampling
 - iii. Stratified sampling
 - iv. Cluster sampling