FACULTY OF ENGINEERING & TECHNOLOGY

SYLLABUS

FOR

BACHELOR IN INTERNET & MOBILE TECHNOLOGIES
(Four Years Degree Course)

(Semester: I – IV)

Session: 2014-15

GURU NANAK DEV UNIVERSITY, AMRITSAR

Bachelor in Internet and Mobile Technologies (Semester System)
(Four Years Degree Course)

Eligibility:

(a) 10+2 examination with 40% marks.

OR

(b) Any other examination with 40% marks recognized equivalent to (a) above by the Guru Nanak Dev University, Amritsar.

Semester – I:

Paper ID	Paper Name	Total Marks
IMT-101	Object Oriented Concepts and C++	75
IMT-102	Data Structures	75
IMT-103	Concepts of Computer Science	75
IMT-104	Communication Skills in English – I	50
IMT-105	Punjabi (Compulsory) / ਮੁੱਢਲੀ ਪੰਜਾਬੀ (Basic Punjabi)	50
IMT-106	Practical – Based on Data Structures and C++	50
IMT-107	Practical – Based on SQL	50
	Total Marks:	**425**

Bachelor in Internet and Mobile Technologies (Semester – I)
(Four Years Degree Course)

IMT-101: Object Oriented Concepts and C++

Time: 3 Hours **Max. Marks: 75**

Note: 1. Eight questions are required to be set giving equal weightage to all the units. The candidates will have to attempt any five. All questions carry equal marks.
2. The student can use only Non–programmable & Non–storage type Calculator.

Programming Paradigms: Introduction to the object oriented approach towards programming by discussing Traditional, Structured Programming methodology.

Objects & Classes: Object Definition, Instance, Encapsulation, Data Hiding, Abstraction, Inheritance, Messages, Method, Polymorphism, Classes, Candidate & Abstract Classes to be examples of the Design process.

Responsibilities & Collaborations: Definition of Responsibilities, Identifying & Assigning Responsibilities to form classes, Examine Relationship between classes, Define Collaborations.

Hierarchies & Subsystems: Hierarchy Graphs, Building Hierarchies, Identifying Contracts, Collaboration Graphs, Subsystems, Implementation issues.

Object Oriented Programming using C++: Characteristics of OOP, Overview of C++, I/O using cout and cin, Objects and Classes, Member functions and data, private & public, constructor & destructor, Constructor Overloading, Types of Constructors.

Operator Overloading: Overloading unary and binary operators, Type Conversion using Operator Overloading

Inheritance: Concept of inheritance, Base & derived classes, Access Specifiers, Class Hierarchies, Types of Inheritance with examples.

Virtual Functions and Polymorphism: Virtual functions, friend functions, static function, this pointer, polymorphism, Types of Polymorphism with examples, templates, class templates.

References:

1. Designing Object Oriented Software Rebacca Wirfs - Brock Brian Wilerson, PHI.
2. Object Oriented Programming in Turbo C++, Robert Lafore, Galgotia Publication.
3. Designing Object Oriented Applications using C++ & Booch Method, Robert C. Martin.

Bachelor in Internet and Mobile Technologies (Semester – I)
(Four Years Degree Course)

IMT-102: Data Structures

Time: 3 Hours **Max. Marks: 75**

Note: 1. Eight questions are required to be set giving equal weightage to all the units. The candidates will have to attempt any five. All questions carry equal marks.
2. The student can use only Non–programmable & Non–storage type Calculator.

Preliminaries: Various data structures, common operations on data structures, algorithm complexity, big O notation, time-space tradeoff between algorithms.

Arrays: Arrays defined, representing arrays in memory, various operations on linear arrays, Multi- dimensional arrays, Records.

Linked Lists: Types of linked lists, representing linked lists in memory, advantage of using linked lists over arrays, various operation on linked lists.

Stacks: Description of stack structure, implementation of stack using arrays and linked lists. Applications of stacks - converting arithmetic expression from infix notation to polish and their subsequent evaluation, Quicksort technique to sort an array.

Queues: Description of queue structure, implementation of queue using arrays and linked lists, description of priorities queues. Applications of queues - Operating system simulations.

Trees: Description of tree structure and its terminology, binary search tree, implementing binary search tree using linked lists, various operations on binary search trees.

Heaps: Description of heap structure, implementing heaps using arrays, various operations on heaps, Applications of heaps – Heapsort technique to sort an array, implementation of priority queues.

Graphs: Description of graph structure, implementing graphs in memory using adjacency matrix or adjacency lists, various graphs transversing algorithms, finding shortest path between two nodes, Dijkastra's shortest path algorithm.

Searching and Sorting: Linear Search, Binary search, Bubble Sort, Selection Sort, Insertion Sort, Merge Sort.

Hash Tables: Direct address tables, hash tables, collision resolution by chaining, hash functions, open addressing – linear probing, quadratic probing, double hashing.

Reference:

- Seymour Lipschutz: Theory and Problems of Data Structures, Schaum Outline Series, McGraw-Hill Book Company.

Bachelor in Internet and Mobile Technologies (Semester – I)
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IMT-103: Concepts of Computer Science

Time: 3 Hours **Max. Marks: 75**

Note: 1. Eight questions are required to be set giving equal weightage to all the units. The candidates will have to attempt any five. All questions carry equal marks.
2. The student can use only Non–programmable & Non–storage type Calculator.

Basic Concepts: History & Evolution of Operating System, OS as resource manager, Various views of OS.

Memory Management: Basic Memory management Schemes, Partition memory management, demand paged memory management, segmented memory management, swapping, hierarchy of memory.

Process Management: States of Processes, process scheduling, race conditions, deadlocks, banker's algorithm, precedence graphs, semaphores, monitors.

Basic Concepts of Database Management (Database, Database System, why database, Data independence) an architecture for a database system (levels of the architecture, mappings, DBA, client/server architecture) Introduction to Relational db systems.

ER Model: Overview, ER diagrams, Database design using ER model.

The Relational Model: Relational Data Objects: Domains and relations, Integrity Constraint, SQL Language. Working knowledge of DDL, DML and DCL based statements for generating queries is to be provided.

Relational Database Design: Concepts of functional dependencies, multivalued dependencies, 1NF, 2NF, 3NF, BCNF, Higher Normal Forms.

References:

1. Madnick and Donovan: Operating System, McGraw Hill, 1973.
2. J.L. Peterson, A. Silberchatz: Operating System Concepts, Addison Wesley, 1983.
3. C.J. Date, "An Introduction of Database System", The Systems Programming Series, 6/Ed, Addison-Wesley Publishing Company, Inc., 1995.
4. Silberscatz, Korth and Sudarshan, "Database System Concepts", Third Ed. McGraw Hill International Editions, Computer Science Series-1997.

Bachelor in Internet and Mobile Technologies (Semester – I)
(Four Years Degree Course)

IMT-104: COMMUNICATION SKILLS IN ENGLISH – I

Time: 3 Hours **Max. Marks: 50**

Course Contents:

1. Reading Skills: Reading Tactics and strategies; Reading purposes–kinds of purposes and associated comprehension; Reading for direct meanings; Reading for understanding concepts, details, coherence, logical progression and meanings of phrases/ expressions.

Activities:

a) Active reading of passages on general topics
b) Comprehension questions in multiple choice format
c) Short comprehension questions based on content and development of ideas

2. Writing Skills: Guidelines for effective writing; writing styles for application, resume, personal letter, official/ business letter, memo, notices etc.; outline and revision.

Activities:

a) Formatting personal and business letters.
b) Organising the details in a sequential order
c) Converting a biographical note into a sequenced resume or vice-versa
d) Ordering and sub-dividing the contents while making notes.
e) Writing notices for circulation/ boards

Suggested Pattern of Question Paper:

The question paper will consist of five skill–oriented questions from Reading and Writing Skills. Each question will carry 10 marks. The questions shall be phrased in a manner that students know clearly what is expected of them. There will be internal choice wherever possible.

10x5=50 Marks

i) Multiple choice questions on the language and meanings of an unseen passage.
ii) Comprehension questions with short answers on content, progression of ideas, purpose of writing etc. of an unseen passage.
iii) Personal letter and Official/Business correspondence
iv) Making point-wise notes on a given speech/ technical report OR
Writing notices for public circulation on topics of professional interest
v) Do as directed (10x1= 10 Marks) (change of voice, narration, combination of 2 simple sentences into one, subject-verb agreement, using appropriate tense, forms of verbs.

Recommended Books:

1. Oxford Guide to Effective Writing and Speaking by John Seely.
2. The Written Word by Vandana R Singh, Oxford University Press

Bachelor in Internet and Mobile Technologies (Semester – I)
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IMT-105: ਪੰਜਾਬੀ (ਲਾਜ਼ਮੀ)

ਸਮਾਂ : 3 ਘੰਟੇ **ਕੁਲ ਅੰਕ : 50**

ਪਾਠ-ਕ੍ਰਮ ਅਤੇ ਪਾਠ-ਪੁਸਤਕਾਂ

1. **ਗਿਆਨ ਮਾਲਾ** (ਵਿਗਿਆਨਕ ਤੇ ਸਮਾਜ-ਵਿਗਿਆਨਕ ਲੇਖਾਂ ਦਾ ਸੰਗ੍ਰਹਿ),
(ਸੰਪਾ. ਡਾ. ਸਤਿੰਦਰ ਸਿੰਘ, ਪ੍ਰੋ. ਮਹਿੰਦਰ ਸਿੰਘ ਬਨਵੈਤ), ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਯੂਨੀਵਰਸਿਟੀ, ਅੰਮ੍ਰਿਤਸਰ।
ਲੇਖ : ਪਹੀਆ ਪ੍ਰਦੂਸ਼ਣ, ਭਰੂਣ ਹੱਤਿਆ ਦੇ ਦੇਸ਼ ਵਿਚ, ਨਾਰੀ ਸ਼ਕਤੀ, ਵਾਤਾਵਰਣੀ ਪ੍ਰਦੂਸ਼ਣ ਅਤੇ ਮਨੁੱਖ, ਏਡਜ਼ : ਇਕ ਗੰਭੀਰ ਸੰਕਟ।
2. **ਪੰਜਾਬ ਦੇ ਮਹਾਨ ਕਲਾਕਾਰ** (ਬਲਵੰਤ ਗਾਰਗੀ),
ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਯੂਨੀਵਰਸਿਟੀ, ਅੰਮ੍ਰਿਤਸਰ।
ਲੇਖ : ਕੇ.ਐਲ.ਸਹਿਗਲ, ਬੜੇ ਗ਼ੁਲਾਮ ਅਲੀ ਖਾਂ, ਸੋਭਾ ਸਿੰਘ, ਪ੍ਰਿਥਵੀਰਾਜ ਕਪੂਰ, ਭਾਈ ਸਮੁੰਦ ਸਿੰਘ।
3. **ਪੈਰ੍ਹਾ ਰਚਨਾ**
4. **ਪੈਰ੍ਹਾ ਪੜ੍ਹ ਕੇ ਪ੍ਰਸ਼ਨਾਂ ਦੇ ਉੱਤਰ**।
5. (ੳ) **ਪੰਜਾਬੀ ਧੁਨੀ ਵਿਉਂਤ** : ਉਚਾਰਨ ਅੰਗ, ਉਚਾਰਨ ਸਥਾਨ ਤੇ ਵਿਧੀਆਂ, ਸਵਰ, ਵਿਅੰਜਨ, ਸੁਰ।
(ਅ) **ਭਾਸ਼ਾ ਵੰਨਗੀਆਂ** : ਭਾਸ਼ਾ ਦਾ ਟਕਸਾਲੀ ਰੂਪ, ਭਾਸ਼ਾ ਅਤੇ ਉਪ-ਭਾਸ਼ਾ ਦਾ ਅੰਤਰ, ਪੰਜਾਬੀ ਉਪਭਾਸ਼ਾਵਾਂ ਦੇ ਪਛਾਣ-ਚਿੰਨ੍ਹ।
6. **ਮਾਤ ਭਾਸ਼ਾ ਦਾ ਅਧਿਆਪਨ**
(ੳ) ਪਹਿਲੀ ਭਾਸ਼ਾ ਦੇ ਤੌਰ ਉੱਤੇ
(ਅ) ਦੂਜੀ ਭਾਸ਼ਾ ਦੇ ਤੌਰ ਉੱਤੇ

ਅੰਕ-ਵੰਡ ਅਤੇ ਪਰੀਖਿਅਕ ਲਈ ਹਦਾਇਤਾਂ:

1.	ਕਿਸੇ ਨਿਬੰਧ ਦਾ ਸਾਰ ਜਾਂ ਉਸਦਾ ਵਿਸ਼ਾ ਵਸਤੂ (ਦੋ ਵਿਚੋਂ ਇਕ) ।	10 ਅੰਕ
2.	ਰੇਖਾ ਚਿਤਰ : ਸਾਰ, ਵਿਸ਼ਾ-ਵਸਤੂ, ਸ਼ਖ਼ਸੀਅਤ ਦੇ ਗੁਣ	10 ਅੰਕ
3.	ਪੈਰ੍ਹਾ ਰਚਨਾ : ਤਿੰਨ ਵਿਸ਼ਿਆਂ ਵਿਚੋਂ ਕਿਸੇ ਇਕ ਉਤੇ ਪੈਰ੍ਹਾ ਲਿਖਣ ਲਈ ਕਿਹਾ ਜਾਵੇ ।	5 ਅੰਕ
4.	ਪੈਰ੍ਹਾ ਦੇ ਕੇ ਉਸ ਬਾਰੇ ਪੰਜ ਪ੍ਰਸ਼ਨਾਂ ਦੇ ਉੱਤਰ।	5 ਅੰਕ
5.	ਨੰਬਰ 5 ਉਤੇ ਦਿੱਤੀ ਵਿਆਕਰਣ ਦੇ ਆਧਾਰ 'ਤੇ ਵਰਣਨਾਤਮਕ ਪ੍ਰਸ਼ਨ।	10 ਅੰਕ
6.	ਨੰਬਰ 6 ਵਿਚ ਮਾਤ ਭਾਸ਼ਾ ਦੇ ਪਹਿਲੀ ਭਾਸ਼ਾ ਅਤੇ ਦੂਜੀ ਭਾਸ਼ਾ ਵਜੋਂ ਅਧਿਆਪਨ, ਮਹੱਤਵ ਅਤੇ ਸਮੱਸਿਆਵਾਂ ਬਾਰੇ ਚਾਰ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ, ਜਿਨ੍ਹਾਂ ਵਿਚੋਂ ਵਿਦਿਆਰਥੀ ਨੇ ਦੋ ਦਾ ਉੱਤਰ ਦੇਣਾ ਹੋਵੇਗਾ।	5×2=10 ਅੰਕ

Bachelor in Internet and Mobile Technologies (Semester – I)
(Four Years Degree Course)

IMT-105: ਮੁੱਢਲੀ ਪੰਜਾਬੀ
(In lieu of Compulsory Punjabi)

ਸਮਾਂ : ਤਿੰਨ ਘੰਟੇ **ਕੁੱਲ ਅੰਕ : 50**

ਪਾਠ-ਕ੍ਰਮ

1. ਪੰਜਾਬੀ ਭਾਸ਼ਾ
   ਗੁਰਮੁਖੀ ਲਿਪੀ
   ਗੁਰਮੁਖੀ ਲਿਪੀ : ਬਣਤਰ ਅਤੇ ਤਰਤੀਬ 20 ਅੰਕ

2. ਗੁਰਮੁਖੀ ਆਰਥੋਗ੍ਰਾਫ਼ੀ
   ਸੂਰਾਂ ਦੀ ਵੰਡ ਅਤੇ ਉਚਾਰਨ
   ਵਿਅੰਜਨਾਂ ਦੀ ਵੰਡ ਅਤੇ ਉਚਾਰਨ 15 ਅੰਕ

3. ਪੰਜਾਬੀ ਸ਼ਬਦ-ਬਣਤਰ ਅਤੇ ਰਚਨਾ
   ਸਾਧਾਰਨ ਸ਼ਬਦ
   ਨਿੱਤ ਵਰਤੋਂ ਦੀ ਪੰਜਾਬੀ ਸ਼ਬਦਾਵਲੀ 15 ਅੰਕ

ਯੂਨਿਟ ਅਤੇ ਥੀਮ:

1. ਪੰਜਾਬੀ ਭਾਸ਼ਾ : ਨਾਮਕਰਣ ਅਤੇ ਸੰਖੇਪ ਜਾਣ ਪਛਾਣ, ਗੁਰਮੁਖੀ ਲਿਪੀ : ਨਾਮਕਰਣ, ਗੁਰਮੁਖੀ ਵਰਣਮਾਲਾ; ਪੈਂਤੀ ਅੱਖਰੀ, ਅੱਖਰ ਕ੍ਰਮ, ਸੂਰ ਵਾਹਕ (ਓ ਅ ੲ), ਲਗਾਂ ਮਾਤਰਾਂ, ਪੈਰ ਵਿਚ ਬਿੰਦੀ ਵਾਲੇ ਵਰਣ, ਪੈਰ ਵਿਚ ਪੈਣ ਵਾਲੇ ਵਰਣ, ਬਿੰਦੀ, ਟਿੱਪੀ, ਅੱਧਕ।
2. ਗੁਰਮੁਖੀ ਆਰਥੋਗ੍ਰਾਫ਼ੀ ਅਤੇ ਉਚਾਰਨ ; ਸੂਰਾਂ ਦੀ ਵੰਡ ਅਤੇ ਉਚਾਰਨ (ਲਘੂ-ਦੀਰਘ ਸੂਰ) ; ਸੂਰ ਅਤੇ ਲਗਾਂ ਮਾਤਰਾਂ ; ਵਿਅੰਜਨਾਂ ਦੀ ਵੰਡ ਅਤੇ ਉਚਾਰਨ ; ਪੈਰ ਵਿਚ ਪੈਣ ਵਾਲੇ ਵਰਣਾਂ (ਹ, ਰ, ਵ) ਦਾ ਉਚਾਰਨ ; ਲ ਅਤੇ ਲ਼ ਦਾ ਉਚਾਰਨ ; ਭ,ਧ,ਢ,ਝ,ਘ ਦਾ ਉਚਾਰਨ; ਪੈਰ ਵਿਚ ਬਿੰਦੀ ਵਾਲੇ ਵਰਣਾਂ ਦਾ ਉਚਾਰਨ।
3. ਪੰਜਾਬੀ ਸ਼ਬਦ-ਬਣਤਰ ਅਤੇ ਰਚਨਾ: ਸਾਧਾਰਨ ਸ਼ਬਦ; ਇਕੱਲਾ ਸੂਰ (ਜਿਵੇਂ ਆ) ; ਸੂਰ ਅਤੇ ਵਿਅੰਜਨ (ਜਿਵੇਂ ਆਰ) ; ਵਿਅੰਜਨ ਅਤੇ ਸੂਰ (ਜਿਵੇਂ ਪਾ) ; ਵਿਅੰਜਨ ਸੂਰ ਵਿਅੰਜਨ (ਜਿਵੇਂ ਪਾਰ) ; ਪੰਜਾਬੀ ਸ਼ਬਦ ਰਚਨਾ ; ਲਿੰਗ-ਪੁਲਿੰਗ, ਇਕ ਵਚਨ-ਬਹੁ ਵਚਨ; ਨਿੱਤ ਵਰਤੋਂ ਦੀ ਪੰਜਾਬੀ ਸ਼ਬਦਾਵਲੀ; ਖਾਣ-ਪੀਣ ਅਤੇ ਸਾਕਾਦਾਰੀ ਨਾਲ ਸੰਬੰਧਿਤ।

BACHELOR OF DESIGN (SEMESTER – I) FOUNDATION COURSE

ਅੰਕ–ਵੰਡ ਅਤੇ ਪਰੀਖਿਅਕ ਲਈ ਹਦਾਇਤਾਂ:

1. ਪਹਿਲੇ ਯੂਨਿਟ ਵਿੱਚੋਂ ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਅਤੇ ਗੁਰਮੁਖੀ ਲਿਪੀ ਦੀ ਬਣਤਰ ਅਤੇ ਤਰਤੀਬ ਨਾਲ ਸਬੰਧਿਤ 5–5 ਅੰਕਾਂ ਦੇ ਚਾਰ ਵਿਹਾਰਕ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ। ਅੰਕਾਂ ਦੀ ਵੰਡ ਅੱਗੋਂ ਇਕ–ਇਕ ਜਾਂ ਦੋ–ਦੋ ਅੰਕਾਂ ਦੇ ਛੋਟੇ ਪ੍ਰਸ਼ਨਾਂ ਵਿਚ ਕੀਤੀ ਜਾ ਸਕਦੀ ਹੈ।
2. ਦੂਜੇ ਯੂਨਿਟ ਵਿੱਚੋਂ ਗੁਰਮੁਖੀ ਆਰਥੋਗ੍ਰਾਫ਼ੀ ਅਤੇ ਉਚਾਰਨ ਨਾਲ ਸਬੰਧਿਤ 5–5 ਅੰਕਾਂ ਦੇ ਤਿੰਨ ਵਿਹਾਰਕ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ। ਅੰਕਾਂ ਦੀ ਵੰਡ ਅੱਗੋਂ ਇਕ–ਇਕ ਜਾਂ ਦੋ–ਦੋ ਅੰਕਾਂ ਦੇ ਛੋਟੇ ਪ੍ਰਸ਼ਨਾਂ ਵਿਚ ਕੀਤੀ ਜਾ ਸਕਦੀ ਹੈ।
3. ਤੀਜੇ ਯੂਨਿਟ ਵਿੱਚੋਂ ਪੰਜਾਬੀ ਸ਼ਬਦ–ਬਣਤਰ ਅਤੇ ਸ਼ਬਦ ਰਚਨਾ ਨਾਲ ਸਬੰਧਿਤ 5–5 ਅੰਕਾਂ ਦੇ ਦੋ ਵਿਹਾਰਕ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ। ਅੰਕਾਂ ਦੀ ਵੰਡ ਅੱਗੋਂ ਇਕ–ਇਕ ਜਾਂ ਦੋ–ਦੋ ਅੰਕਾਂ ਦੇ ਛੋਟੇ ਪ੍ਰਸ਼ਨਾਂ ਵਿਚ ਕੀਤੀ ਜਾ ਸਕਦੀ ਹੈ।
4. ਨਿੱਤ ਵਰਤੋਂ ਦੀ ਪੰਜਾਬੀ ਸ਼ਬਦਾਵਲੀ ਨਾਲ ਸਬੰਧਿਤ ਇਕ–ਇਕ ਅੰਕ ਦੇ ਪੰਜ (ਆਬਜੈਕਟਿਵ) ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ।
5. ਪ੍ਰਸ਼ਨਾਂ ਦੀ ਭਾਸ਼ਾ ਸਰਲ ਅਤੇ ਸਪਸ਼ਟ ਰੱਖੀ ਜਾਵੇ।

Bachelor in Internet and Mobile Technologies (Semester – I)
(Four Years Degree Course)

IMT-106: Practical – Based on Data Structures and C++

Marks: 50

Bachelor in Internet and Mobile Technologies (Semester – I)
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IMT-107: Practical – Based on SQL

Marks: 50

Bachelor in Internet and Mobile Technologies (Semester System)
(Four Years Degree Course)

Semester – II:

Paper ID	Paper Name	Total Marks
IMT-201	Scripting Languages	75
IMT-202	Web Designing	75
IMT-203	Fundamentals of PHP	75
IMT-204	Internet and E-Commerce	75
IMT-205	Communication Skills in English – II (Th.35+Pra.15)	50
IMT-206	Punjabi (Compulsory) / ਮੁੱਢਲੀ ਪੰਜਾਬੀ (Basic Punjabi)	50
IMT-207	Practical – Based on PHP and Scripting Languages	50
IMT-208	Live Working Project	50
	Total Marks:	**500**

Bachelor in Internet and Mobile Technologies (Semester – II)
(Four Years Degree Course)

IMT-201: Scripting Languages

Time: 3 Hours **Max. Marks: 75**

Note: 1. Eight questions are required to be set giving equal weightage to all the units. The candidates will have to attempt any five. All questions carry equal marks.
2. The student can use only Non–programmable & Non–storage type Calculator.

The Web: Historical Perspective of HTTP, Uniform Resource Locator, Request-Response paradigm, Statelessness, Request Methods with Status Codes, Structure of HTTP Message: Content Types, caching control, security, session support; Virtual Hosting, Caching Support and Persistent Connections.

Client Side Script: Scripting Language variables, functions, conditions, Objects; DOM, Data Validation, Web browser Configuration, Comparison of Client Side Scripting Languages.

Browser Languages:

XHTML: Forms, Frames, Tables etc.

DHTML: Cascading Style Sheets, Object Model, Event Model, Filters and Transitions,

Data Controls, Handling of Multimedia Data ;

XML: Introduction, Syntax, Document structure, Document type Definitions, namespaces, XML schemas, Displaying raw XML documents, Displaying XML documents with CSS, XSLT stylesheets, XML Processors, Introduction XSL, XML transformed, XSL elements transforming with XSLT, web feeds (RSS).

Overview of Server Side Script:

Static vs. Dynamic web pages, Need of Server Side Scripting, Server Side scripting, Multitier Web Architecture.

References:

1. Leon Shklar and Rich Rosen, Web Application Architecture: Principles, Protocols and Practices, Wiley, 2009.
2. Chris Bates, Web Programming: Building Internet Applications, John Wiley and Sons Ltd.
3. Patrick Carey, HTML, XHTML and XML , Course Technology CENGAGE Learning, 2010.
4. Elliotte Rusty Harold and W. Scott Means, XML in a Nutshell, O'REILLY, 2001-2004.
5. Paul Wilton, Beginning Javascript, Wiley – India, 2004.

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IMT-202: Web Designing

Time: 3 Hours **Max. Marks: 75**

Note: 1. Eight questions are required to be set giving equal weightage to all the units. The candidates will have to attempt any five. All questions carry equal marks.
2. The student can use only Non–programmable & Non–storage type Calculator.

Introduction to Dreamweaver CS4
About Dreamweaver CS4, Opening Files in Dreamweaver, The Menu Bar, Properties Inspector and Panels, Panels, Moving Panels, The Properties Inspector, The Document Window, The Status Bar, The Document Toolbar, Coding Toolbar

Creating Your First Website
Set up a New Site, Creating a Root Folder, Adding Text on a Page, Formatting Text, Paragraphs, Line Breaks, Fonts, Color, Formatting Paragraphs, Creating Lists, Increase and Reduce Indentions, Insert Special Characters, Images, Inserting Images, Add White Space around Images, Align Images, Add Border to an Image, Crop an Image, Resizing Images, Create Image Placeholders, Creating Links, Text Links, Make an Image a Clickable Link, Make a Clickable, Image that Enlarges When Clicked, Create an Email Link, Create Anchors and Jump Links

Designing with Tables
Setting Up a New Site, Creating Tables, Setting Table Properties and the Properties Inspector, Placing Images and Graphics Into Tables, Adding a Background Color, Using Tracer Images in to Design a Website

Creating a Site Using a Template
Browsing Templates, Creating Your Website From a Template, Adding Images, Changing Background Colors, Create a Template from an Existing Site, Setting Editable and Uneditable Regions, Nested Templates

Creating Online Forms
Form Basics, Creating a Basic HTML Form, Validation, Create Hints for Text Fields, Block Invalid Characters, Add a Validated Text Field, Add a Text Area, Add Checkboxes, Adding Radio Buttons, Adding List Menus, Creating a Submit Button
Libraries, Assets, and More Time Saving Tools
Creating Library Items, Insert a Library Item into a Document, Edit a Library Item, The Assets Panel, The Find and Replace Command, Check Spelling,

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Creating a Website with Frames

Creating Frames and Framesets, Creating a Predefined Frameset, Design Your Own Frameset, Resize a Frame, Open a Document in a Frame, Save Framesets and Frames, Create a Scroll Bar, When to Use Frames

Rollovers and Other Image Tricks, Drawing Image Maps,

Designing with Cascading Style Sheets

Creating Style Sheets, CSS Code Format, The CSS Styles Panel and Editing Styles, External Style Sheets, Applying Existing External Style Sheets, Working with Predefined Styles, Adding Additional Rules, Creating a New Class Style, Creating a New ID, Edit a Rule, CSS Layout

Creating Precise Designs Using AP Elements

Drawing AP Div Elements, Stacking Multiple AP Div Elements, Arranging Layers Using the Z Index, Prevent Overlaps, Hiding/Showing AP Div Elements, AP Div Elements Properties Inspector, Nested AP Div Elements, Aligning AP Div Elements, Using Tables within AP Elements, Adding Background Images, Creating a Tracing Image

Behaviors

Using the Behaviors Panel, Applying and Changing Behaviors, Changing Behaviors, Create a Pop Up Window, Create Status Bar Text, Assign Behaviors to an Image Map

Adding Audio, Video & Flash to a Page

Embedding vs. Linking, Working with Flash Embedding SWF Files into a Dreamweaver Document Exploring the Flash Properties Inspector, Additional Properties, Embedding FLV Files in Dreamweaver Documents, Progressive Download Video Options, Streaming Video Options, Windows Media, QuickTime, and Other Video Formats, Adding Audio to a Page.

Working in the Code

Introduction to HTML, HTML Attributes, Viewing Source Code in a Browser Window, Edit HTML Code, Code View Options, Code Hints, Using the Code Inspector, Cleaning Up HTML, Creating Snippets

Publishing & Managing Your Website

Setting up the Server Information for FTP, The File Panel Options and Viewing Remote Files, Transferring Files To and From a Server, Getting Files, Putting Files, Working with the Synchronize Buttons, Enable Cloaking, Activating Collaborative Features, Working with Design Notes, Enabling Design Notes, and Creating Design Notes.

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IMT-203: Fundamentals of PHP

Time: 3 Hours **Max. Marks: 75**

Note: 1. Eight questions are required to be set giving equal weightage to all the units. The candidates will have to attempt any five. All questions carry equal marks.
2. The student can use only Non–programmable & Non–storage type Calculator.

PHP Introduction:
A Brief History of PHP - Installing PHP - A Walk Through PHP - Installing and Configuring PHP on Windows.

Language Basics:
Lexical Structure -Data Types -Variables -Expressions and Operators – Constants - Flow-Control Statements -Including Code -Embedding PHP in Web Pages

Functions:
Calling a Function - Defining a Function - Variable Scope -Function Parameters – Return-Values -Variable Functions - Anonymous Functions.

Strings:
Quoting String Constants - Printing Strings - Accessing Individual Characters -Cleaning Strings - Encoding and Escaping -Comparing Strings - Manipulating and Searching Strings - Regular Expressions.

Arrays:
Indexed Versus Associative Arrays - Identifying Elements of an Array - Storing Data in Arrays - Multidimensional Arrays - Extracting Multiple Values - Converting Between Arrays and Variables - Traversing Arrays - Sorting - Acting on Entire Arrays - Using Arrays.

Objects:
Terminology - Creating an Object - Accessing Properties and Methods - Declaring a Class - Introspection – Serialization
Extending PHP:

Architectural Overview - What You'll Need - Building Your First Extensions - The config.m4 File - Memory Management - The pval / zval Data Type - Parameter Handling - Returning Values - References - Global Variables - Creating Variables - Extension INI Entries – Resources.

Reference:
1. Programming PHP Rasmus Leadoff and Levin Tatroe O'Reilly Publications.

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IMT-204: Internet and E-Commerce

Time: 3 Hours **Max. Marks: 75**

Note: 1. Eight questions are required to be set giving equal weightage to all the units. The candidates will have to attempt any five. All questions carry equal marks.
2. The student can use only Non–programmable & Non–storage type Calculator.

Introduction to Networks: Uses of Computer Networks, Network Hardware, Network Software, seven-layer OSI architecture of ISO, concepts of layer protocols and layer interfaces, TCP/IP reference model, comparison of OSI &TCP/IP reference models.

Internet Addresses, The Domain Name System, Client-Server Model, Port Numbers, Implementations and Application Programming Interface.

Electronic Communication, PCs and Networking, E-mail, Internet and intranets.

EDI to E-commerce, EDI, UN/EDIFACT

Security Technologies: Cryptography, Public Key Algorithms, Private Key Algorithms, Hashing techniques, Certification and key Distribution, Cryptographic Applications, Encryption, Digital Signatures.

Protocols for Transactions. SSL-Secure Socket Layer, SET-Secure Electronic Transaction, Credit Card Business

Electronic Commerce providers. CyberCash, Digicash, VeriSign

References:

1. Kamlesh K. Bajaj,Debjani Nag , E – Commerce – The Cutting Edge of Business.
2. Forouzon Behrouz: Data Communications, Tata McGraw Hill.

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IMT-205: COMMUNICATION SKILLS IN ENGLISH – II

Time: 3 Hours **Max. Marks: 50**
Theory Marks: 35
Practical Marks: 15

Course Contents:

1. **Listening Skills:** Barriers to listening; effective listening skills; feedback skills. Attending telephone calls; note taking.
   Activities:
   a) Listening exercises – Listening to conversation, News and TV reports
   b) Taking notes on a speech/lecture

2. **Speaking and Conversational Skills**: Components of a meaningful and easy conversation; understanding the cue and making appropriate responses; forms of polite speech; asking and providing information on general topics.
   The study of sounds of English, stress and intonation
   Situation based Conversation in English
   Essentials of Spoken English
   Activities:
   a) Making conversation and taking turns
   b) Oral description or explanation of a common object, situation or concept
   c) Giving interviews

Suggested Pattern:
The question paper will consist of seven questions related to speaking and listening skills. Each question will carry 5 marks. The nature of the questions will be as given below:
Two questions requiring students to give descriptive answers.
Three questions in the form of practical exercises requiring students to give an appropriate response to a question, a proposal, a proposition, an invitation etc. For example, the paper setter may give a proposition and ask the students to agree or disagree with it or introduce a character giving invitation and ask the students to accept or refuse it etc.
Two questions requiring students to transcribe simple words in IPA symbols, marking stress and marking intonation.

Practical /Oral Testing

Marks: 15

Course Contents:
1. Oral Presentation with/without audio visual aids.
2. Group Discussion.
3. Listening to any recorded or live material and asking oral questions for listening comprehension.

Questions:
1. Oral Presentation will be of 5 to 10 minutes duration. (Topic can be given in advance or it can be of student's own choice). Use of audio visual aids is desirable.
2. Group discussion comprising 8 to 10 students on a familiar topic. Time for each group will be 15 to 20 minutes.

Note: Oral test will be conducted by external examiner with the help of internal examiner.

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IMT-206: ਪੰਜਾਬੀ (ਲਾਜ਼ਮੀ)

ਸਮਾਂ : 3 ਘੰਟੇ **ਕੁਲ ਅੰਕ : 50**

ਪਾਠ-ਕ੍ਰਮ ਅਤੇ ਪਾਠ-ਪੁਸਤਕਾਂ

1. **ਗਿਆਨ ਮਾਲਾ** (ਵਿਗਿਆਨਕ ਤੇ ਸਮਾਜ-ਵਿਗਿਆਨਕ ਲੇਖਾਂ ਦਾ ਸੰਗ੍ਰਹਿ)
(ਸੰਪ. ਡਾ. ਸਤਿੰਦਰ ਸਿੰਘ, ਪ੍ਰੋ. ਮਹਿੰਦਰ ਸਿੰਘ ਬਨਵੈਤ), ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਯੂਨੀਵਰਸਿਟੀ, ਅੰਮ੍ਰਿਤਸਰ, 2007
ਲੇਖ : ਸਾਹਿਤ ਤੇ ਲੋਕ ਸਾਹਿਤ, ਅੱਖਾਂ, ਅਚੇਤਨ ਦਾ ਗੁਣ ਤੇ ਸੁਭਾਅ, ਕੰਪਿਊਟਰ ਅਤੇ ਇੰਟਰਨੈੱਟ, ਮਨੁੱਖੀ ਅਧਿਕਾਰ।
2. **ਪੰਜਾਬ ਦੇ ਮਹਾਨ ਕਲਾਕਾਰ** (ਬਲਵੰਤ ਗਾਰਗੀ), ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਯੂਨੀਵਰਸਿਟੀ, ਅੰਮ੍ਰਿਤਸਰ।
ਲੇਖ : ਸਤੀਸ਼ ਗੁਜਰਾਲ, ਗੁਰਚਰਨ ਸਿੰਘ, ਠਾਕੁਰ ਸਿੰਘ, ਬਲਰਾਜ ਸਾਹਨੀ, ਸੁਰਿੰਦਰ ਕੌਰ।
3. **ਸ਼ਬਦ-ਬਣਤਰ ਅਤੇ ਸ਼ਬਦ ਰਚਨਾ** : ਪਰਿਭਾਸ਼ਾ, ਮੁੱਢਲੇ ਸੰਕਲਪ
4. **ਸ਼ਬਦ ਸ਼੍ਰੇਣੀਆਂ**
5. **ਪੈਰ੍ਹਾ ਰਚਨਾ**
6. **ਪੈਰ੍ਹਾ ਪੜ੍ਹ ਕੇ ਪ੍ਰਸ਼ਨਾਂ ਦੇ ਉੱਤਰ**
7. **ਮੁਹਾਵਰੇ ਅਤੇ ਅਖਾਣ**

ਅੰਕ ਵੰਡ ਅਤੇ ਪਰੀਖਿਅਕ ਲਈ ਹਦਾਇਤਾਂ

1.	ਕਿਸੇ ਨਿਬੰਧ ਦਾ ਸਾਰ ਜਾਂ ਉਸਦਾ ਵਿਸ਼ਾ ਵਸਤੂ (ਦੋ ਵਿਚੋਂ ਇਕ) ।	10 ਅੰਕ
2.	ਵਾਰਤਕ ਰੂਪ : ਰੇਖਾ ਚਿਤਰ, ਨਾਇਕ ਬਿੰਬ, ਕਲਾਤਮਕ ਗੁਣ, ਰੇਖਾ ਚਿਤਰ ਸਾਹਿਤ ਨੂੰ ਦੇਣ	10 ਅੰਕ
3–4.	3–4 ਨੰਬਰ ਉੱਤੇ ਦਿੱਤੀ ਵਿਆਕਰਣ ਦੇ ਆਧਾਰ ਤੇ ਵਰਣਨਾਤਮਕ ਪ੍ਰਸ਼ਨ।	10 ਅੰਕ
5.	ਪੈਰ੍ਹਾ ਰਚਨਾ : ਤਿੰਨ ਵਿਸ਼ਿਆਂ ਵਿਚੋਂ ਕਿਸੇ ਇਕ ਉਤੇ ਪੈਰ੍ਹਾ ਲਿਖਣ ਲਈ ਕਿਹਾ ਜਾਵੇ ।	5 ਅੰਕ
6.	ਪੈਰ੍ਹਾ ਦੇ ਕੇ ਉਸ ਬਾਰੇ ਪੰਜ ਪ੍ਰਸ਼ਨਾਂ ਦੇ ਉੱਤਰ	5 ਅੰਕ
7.	ਨੰਬਰ 7 ਵਿਚ ਅੱਠ ਅਖਾਣ ਅਤੇ ਅੱਠ ਮੁਹਾਵਰੇ ਪੁੱਛੇ ਜਾਣਗੇ, ਜਿਨ੍ਹਾਂ ਵਿਚੋਂ ਵਿਦਿਆਰਥੀ ਨੇ ਪੰਜ-ਪੰਜ ਨੂੰ ਵਾਕਾਂ ਵਿਚ ਵਰਤ ਕੇ ਅਰਥ ਸਪੱਸ਼ਟ ਕਰਨੇ ਹੋਣਗੇ ।	5+5= 10 ਅੰਕ

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IMT-206: ਮੁੱਢਲੀ ਪੰਜਾਬੀ
(In lieu of Compulsory Punjabi)

ਸਮਾਂ : ਤਿੰਨ ਘੰਟੇ **ਕੁੱਲ ਅੰਕ : 50**

ਪਾਠ-ਕ੍ਰਮ

1. ਪੰਜਾਬੀ ਸ਼ਬਦ-ਬਣਤਰ
   ਸੰਯੁਕਤ ਅਤੇ ਮਿਸ਼ਰਤ ਸ਼ਬਦ
   ਨਿੱਤ ਵਰਤੋਂ ਦੀ ਪੰਜਾਬੀ ਸ਼ਬਦਾਵਲੀ 20 ਅੰਕ

2. ਪੰਜਾਬੀ ਵਾਕ-ਬਣਤਰ
   ਸਾਧਾਰਨ ਵਾਕ : ਕਿਸਮਾਂ
   ਸੰਯੁਕਤ ਵਾਕ : ਕਿਸਮਾਂ
   ਮਿਸ਼ਰਤ ਵਾਕ : ਕਿਸਮਾਂ
   ਪੰਜਾਬੀ ਵਾਕਾਂ ਦੀ ਵਰਤੋਂ ਦੇ ਵਿਭਿੰਨ ਸਮਾਜਿਕ ਪ੍ਰਸੰਗ 15 ਅੰਕ

3. ਪ੍ਰਕਾਰਜੀ ਪੰਜਾਬੀ
   ਚਿੱਠੀ ਪੱਤਰ
   ਪੈਰਾ ਰਚਨਾ
   ਅਖਾਣ ਅਤੇ ਮੁਹਾਵਰੇ 15 ਅੰਕ

ਯੂਨਿਟ ਅਤੇ ਥੀਮ:

1. ਪੰਜਾਬੀ ਸ਼ਬਦ ਬਣਤਰ: ਸੰਯੁਕਤ ਸ਼ਬਦ ; ਸਮਾਸੀ ਸ਼ਬਦ (ਜਿਵੇਂ ਲੋਕ ਸਭਾ) ; ਦੋਹਰੇ ਸ਼ਬਦ/ਦੁਹਰੁਕਤੀ (ਜਿਵੇਂ ਧੂੜ ਧਾੜ/ਭਰ ਭਰ), ਮਿਸ਼ਰਤ ਸ਼ਬਦਾਂ ਦੀ ਬਣਤਰ/ਸਿਰਜਨਾ; ਅਗੇਤਰਾਂ ਰਾਹੀਂ (ਜਿਵੇਂ ਉਪ-ਭਾਸ਼ਾ), ਪਿਛੇਤਰਾਂ ਰਾਹੀਂ (ਜਿਵੇਂ ਰੰਗਲਾ), ਪੰਜਾਬੀ ਸ਼ਬਦ ਰਚਨਾ; ਪੜਨਾਵੀਂ ਰੂਪ, ਕਿਰਿਆ/ਸਹਾਇਕ ਕਿਰਿਆ ਦੇ ਰੂਪ ; ਨਿੱਤ ਵਰਤੋਂ ਦੀ ਪੰਜਾਬੀ ਸ਼ਬਦਾਵਲੀ ; ਰੁੱਤਾਂ, ਮਹੀਨਿਆਂ, ਮੌਸਮਾਂ, ਗਿਣਤੀ ਨਾਲ ਸਬੰਧਿਤ।
2. ਪੰਜਾਬੀ ਵਾਕ-ਬਣਤਰ : ਕਰਤਾ ਕਰਮ ਕਿਰਿਆ; ਸਾਧਾਰਨ ਵਾਕ, ਬਿਆਨੀਆ, ਪ੍ਰਸ਼ਨਵਾਚਕ, ਆਗਿਆਵਾਚਕ; ਸੰਯੁਕਤ ਅਤੇ ਮਿਸ਼ਰਤ ਵਾਕਾਂ ਦੀਆਂ ਕਿਸਮਾਂ ; ਸੁਤੰਤਰ ਅਤੇ ਅਧੀਨ ਉਪਵਾਕ ; ਸਮਾਨ (ਤੇ/ਅਤੇ) ਅਤੇ ਅਧੀਨ (ਜੋ/ਕਿ) ਯੋਜਕਾਂ ਦੀ ਵਰਤੋਂ ; ਪੰਜਾਬੀ ਵਾਕਾਂ ਦੀ ਵਰਤੋਂ ਦੇ ਵਿਭਿੰਨ ਸਮਾਜਕ/ਸਭਿਆਚਾਰਕ ਪ੍ਰਸੰਗ ; ਘਰ ਵਿਚ, ਬਾਜ਼ਾਰ ਵਿਚ, ਮੇਲੇ ਵਿਚ, ਸ਼ੌਪਿੰਗ ਮਾਲ/ਸਿਨਮੇ ਵਿਚ, ਵਿਆਹ ਵਿਚ, ਧਾਰਮਿਕ ਸਥਾਨਾਂ ਵਿਚ, ਦੋਸਤਾਂ ਨਾਲ ਆਦਿ।
3. ਇਸ ਯੂਨਿਟ ਵਿਚ ਚਿੱਠੀ ਪੱਤਰ (ਨਿੱਜੀ/ਦਫ਼ਤਰੀ), ਪੈਰਾ ਰਚਨਾ ਅਤੇ ਅਖਾਣ ਮੁਹਾਵਰਿਆਂ ਦੀ ਵਰਤੋਂ ਰਾਹੀਂ ਵਿਦਿਆਰਥੀ ਦੀ ਭਾਸ਼ਾਈ ਯੋਗਤਾ ਨੂੰ ਪਰਖਿਆ ਜਾਵੇਗਾ।

BACHELOR OF DESIGN (SEMESTER – II) FOUNDATION COURSE

ਅੰਕ-ਵੰਡ ਅਤੇ ਪਰੀਖਿਅਕ ਲਈ ਹਦਾਇਤਾਂ:

1. ਪਹਿਲੇ ਯੂਨਿਟ ਵਿੱਚੋਂ ਪੰਜਾਬੀ ਸ਼ਬਦ ਬਣਤਰ ਅਤੇ ਸ਼ਬਦ ਰਚਨਾ ਨਾਲ ਸਬੰਧਿਤ 5-5 ਅੰਕਾਂ ਦੇ ਤਿੰਨ ਵਿਹਾਰਕ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ। ਅੰਕਾਂ ਦੀ ਵੰਡ ਅੱਗੋਂ ਇਕ-ਇਕ ਜਾਂ ਦੋ-ਦੋ ਅੰਕਾਂ ਦੇ ਛੋਟੇ ਪ੍ਰਸ਼ਨਾਂ ਵਿਚ ਕੀਤੀ ਜਾ ਸਕਦੀ ਹੈ।
2. ਨਿੱਤ ਵਰਤੋਂ ਦੀ ਸ਼ਬਦਾਵਲੀ ਨਾਲ ਸਬੰਧਿਤ ਇਕ-ਇਕ ਅੰਕ ਦੇ ਪੰਜ (ਆਬਜੈਕਟਿਵ) ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ।
3. ਦੂਜੇ ਯੂਨਿਟ ਵਿੱਚ ਪੰਜਾਬੀ ਵਾਕ-ਬਣਤਰ ਨਾਲ ਸਬੰਧਿਤ 5-5 ਅੰਕਾਂ ਦੇ ਦੋ ਵਿਹਾਰਕ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ। ਅੰਕਾਂ ਦੀ ਵੰਡ ਅੱਗੋਂ ਇਕ-ਇਕ ਜਾਂ ਦੋ-ਦੋ ਅੰਕਾਂ ਦੇ ਛੋਟੇ ਪ੍ਰਸ਼ਨਾਂ ਵਿਚ ਕੀਤੀ ਜਾ ਸਕਦੀ ਹੈ।
4. ਪੰਜਾਬੀ ਵਾਕਾਂ ਦੀ ਵਿਹਾਰਕ ਵਰਤੋਂ ਨਾਲ ਸਬੰਧਿਤ 5 ਅੰਕਾਂ ਦਾ ਇਕ ਪ੍ਰਸ਼ਨ ਪੁੱਛਿਆ ਜਾਵੇਗਾ ਜਿਸ ਵਿਚ ਵਿਦਿਆਰਥੀ ਨੂੰ ਕਿਸੇ ਸਮਾਜਿਕ/ਸਭਿਆਚਾਰਕ ਪ੍ਰਸੰਗ ਵਿਚ ਵਰਤੇ ਜਾਂਦੇ ਪੰਜ ਵਾਕ ਲਿਖਣ ਲਈ ਕਿਹਾ ਜਾਵੇਗਾ।
5. ਵਿਦਿਆਰਥੀ ਨੂੰ ਕਿਸੇ ਇਕ ਵਿਸ਼ੇ 'ਤੇ ਨਿੱਜੀ ਜਾਂ ਦਫ਼ਤਰੀ ਚਿੱਠੀ ਲਿਖਣ ਲਈ ਕਿਹਾ ਜਾਵੇਗਾ।
6. ਵਿਦਿਆਰਥੀ ਨੂੰ ਕਿਸੇ ਇਕ ਵਿਸ਼ੇ 'ਤੇ ਪੈਰਾ ਲਿਖਣ ਲਈ ਕਿਹਾ ਜਾਵੇਗਾ।
7. ਵਿਦਿਆਰਥੀ ਨੂੰ ਇਕ-ਇਕ ਅੰਕ ਦੇ ਪੰਜ ਅਖਾਣਾਂ ਜਾਂ ਮੁਹਾਵਰਿਆਂ ਨੂੰ ਵਾਕਾਂ ਵਿਚ ਵਰਤ ਕੇ ਅਰਥ ਸਪਸ਼ਟ ਕਰਨ ਲਈ ਕਿਹਾ ਜਾਵੇਗਾ।
8. ਪ੍ਰਸ਼ਨਾਂ ਦੀ ਭਾਸ਼ਾ ਸਰਲ ਅਤੇ ਸਪਸ਼ਟ ਰੱਖੀ ਜਾਵੇ।

Bachelor in Internet and Mobile Technologies (Semester – II)
(Four Years Degree Course)

IMT-207: Practical – Based on PHP and Scripting Languages

Marks: 50

Bachelor in Internet and Mobile Technologies (Semester – II)
(Four Years Degree Course)

IMT – 208: Live Working Project

Marks: 50

Bachelor in Internet and Mobile Technologies (Semester System)
(Four Years Degree Course)

Semester – III:

Paper ID	Paper Name	Total marks
IMT-301	Open Source Technologies	75
IMT-302	Linux Server Administration	75
IMT-303	Java and Android	75
IMT-304	Advanced PHP	75
IMT-305	Practical Based on Java and Android	50
IMT-306	Practical Based on Advanced PHP	50
	* Environmental Studies – I (Compulsory)	50
	Total Marks:	**400**

* Marks of Paper EVS will not be included in Grand Total.

Bachelors in Internet and Mobile Technologies
(Four Years Degree Course) (Semester–III)

IMT-301: OPEN SOURCE TECHNOLOGIES

Time: 3 Hours **Max Marks: 75**

Note: 1. Eight questions are required to be set giving equal weightage to all the units.
2. The candidates will have to attempt any five. All questions carry equal marks.

Introduction to Open Source Software
History and Emergence of Open Source Software, Community Building, Open Standards, Open Source Licenses.

Introduction to Linux Operating System
Introduction to Linux/Open Source, Linux Installation Process, Navigating the Linux System, Linux Desktop Environment, File Management, Working with Removable Drives , Configuring Printing, Web Browsing, Email Applications, Multimedia, File/Directory Manipulation, Commands, Basic System Maintenance.

Linux System Administration
Overview, Linux Boot up, Remote Connectivity, Root control, Emergency Procedures, File System Structure, Managing your users, Process Management, Automation/Simplification of task through scripting, installing applications.

Linux Web Server
Overview of web Server, System Specifications for Web and FTP Server Installation procedures, Configuration settings, Start/Stop the servers, testing the servers, track of logs, Performance Tuning of servers. Apache HTTP Server and its flavors. WAMP server (Windows, Apache)

Content Management System
OSS for CMS: MediaWiki, Joomla, Drupal, Zope. Wiki Hosting Services, Using Wiki Technologies in libraries for designing subject based encyclopedias, subject directory/portal and so on. Installation of Joomla, Customization of Joomla, Use of Joomla.

Reference Books:

1. Linux: The Complete Reference 6th Edition Authored By: Richard Petersen Publisher: Tata McGraw - Hill Education (2007)
2. Joomla! Explained: Your Step-by-Step Guide 1st Edition Author: Stephen Burge Publisher: Pearson Education (2011)
3. Joomla Bible Author: Ric Shreves, Publisher: Wiley India Pvt. Ltd. (2011)
4. Drupal 7 Bible, Author: Ric Shreves, Brice Dunwoodie, Publisher: Wiley India Pvt. Ltd. (2011)
5. Web Component Development With Zope 3, 2nd Edition 2nd Rev. and Enlarged Ed. Edition Author: Philipp Von Weitershausen Publisher: Springer (2007)

Bachelors in Internet and Mobile Technologies
(Four Years Degree Course) (Semester–III)

IMT-302: LINUX SERVER ADMINISTRATION

Time: 3 Hours **Max Marks: 75**

Note: 1. Eight questions are required to be set giving equal weightage to all the units.
2. The candidates will have to attempt any five. All questions carry equal marks.

Linux Web Server administration:
Introduction to Apache Web Server, Installation of Apache Web Server, Start/Stop and Testing Apache Web Server, Apache Web Server Logs, Performance Tuning of Apache Web Server, Introduction to Pure-FTPd (FTP Server), Installation of Pure-FTPd, Start/Stop and Testing Pure-FTPd, Pure-FTPd Logs, Performance Tuning of Pure-FTPd

Linux File & Print Server administration:
Network Information Services (NIS), NIS Installation, NIS - Lab Exercise, NFS - Network File System, NFS Installation, NFS - Lab Exercise, Introduction to SAMBA, Installation of SAMBA, Start/Stop and Testing SAMBA, SAMBA Logging, Performance Tuning of SAMBA, Lab: Setting Samba as Windows PDC

Linux Mail Server administration:
DNS in a Nutshell, Basic DNS Setting (Manually), DNS Setting Using GUI Interface, Basic Sendmail Configuration

Linux Cache Server administration:
Introduction, Installation, Start/Stop Squid, Login, Advertisement Blocking using Adzap, Transparent Proxy, Authentication Proxy, Content Filtering using SquidGuard

Linux Firewall and Security administration:
Introduction to Firewall Security Administration, System & Network Security, Monitoring Your Network, Introduction To Firewall, Setting Up Linux For Firewall, Netfilter and Iptables (Kernel 2.4.x onwards), Configuring IP Accounting.

Reference Books:

1. Red Hat Linux Networking & System Admin 3rd Edition Author: Terry Collings, Kurt Wall Publisher: Wiley India Pvt. Ltd.
2. Unix and Linux System Administration Handbook 4th Edition Author: Evi Nemeth, Trent R. Hein, Garth Snyder, Ben Whaley, Publisher: Pearson Education (2011)
3. Linux Administration : A Beginner's Guide 5th Edition Authored By: Wale Soyinka, Publisher: Tata McGraw - Hill Education (2008)
4. Linux System Administration Author: Tom Adelstein, Bill Lubanovic, Publisher: O'Reilly Media (2007)

Bachelors in Internet and Mobile Technologies
(Four Years Degree Course) (Semester–III)

IMT-303: JAVA AND ANDROID

Time: 3 Hours **Max Marks: 75**

Note: 1. Eight questions are required to be set giving equal weightage to all the units.
2. The candidates will have to attempt any five. All questions carry equal marks.

Introduction to Android and Java:
Installing Android, Creating Hello World, Running on Emulator, Introduction to Java Data types, Loops, Conditionals and Operators.

Android Architecture and OOPS:
Building Blocks of Android, Java Classes and Objects, Class Methods and Instances, Inheritance and Polymorphism in Java, Interface and Abstract class

Android UI and Advance Java:
Using resources, Using themes, Debugging Android Code, Settings, Java I/O, Threads and Synchronization

Android Graphics and Multimedia:
Basic Graphics, Input Handling, Playing Audio, Playing Video

Persistence in Android:
Accessing Internal Files system, Accessing SD cards, Introduction to SQLite, Data Binding Content Provider

Network Awareness:
Accessing the Internet, Using Web services, Using Java and Java Script, Location Sensing

3D graphics in OpenGL and other views:
OpenGL Introduction, Using Threads and Models, Texture in OpenGL, Making a application in OpenGL, Other standard views in Android

Widgets and the way ahead:
Android Widget Development, The Path Ahead for Android ,Running Application on device , Android Market Some Do's and Don'ts , Introduction to System programming in Android

Reference Books:

1. Learn Java for Android Development, Author: Jeff Friesen, Publisher: Apress (2010)
2. Android Essentials, Author: Chris Haseman, Publisher: Apress (2008)
3. Beginning Android Application Development, Author: Wei-Meng Lee, Publisher: John Wiley & Sons (2011)
4. Programming Android : Java Programming for the New Generation of Mobile Devices 2 Edition, Author: Zigurd Mednieks, Laird Dornin, G. Blake Meike, Masumi Nakamura, Publisher: O'Reilly Media (2012)
5. Sams Teach Yourself Java in 21 Days (Covering Java 7 and Android) 0006 Edition, Author: Rogers Cadenhead, Publisher: Sams (2012)

Bachelors in Internet and Mobile Technologies
(Four Years Degree Course) (Semester–III)

IMT-304: ADVANCED PHP

Time: 3 Hours **Max Marks: 75**

Note: 1. Eight questions are required to be set giving equal weightage to all the units.
2. The candidates will have to attempt any five. All questions carry equal marks.

Beginning with CakePHP:
What is CakePHP, Understanding Model-View-Controller, Basic Principles of CakePHP, CakePHP Structure, A Typical CakePHP Request, CakePHP Folder Structure, CakePHP Conventions, File and Classname Covent.ions, Model and Database Conventions, Controller Conventions, View Conventions,

Developing with CakePHP:
Installation, Configuration, Controllers, Components, Models, Behaviors, DataSources, Views, Helpers, Scaffolding, Global Constants and Functions, Vendor Packages, Data Validations, Pagination

Core Components & Helpers:
Access Control List, Authentication, Cookies, Email, Authentication, Ajax, Form, HTML, JavaScript, Paginator, Session, Text.

CakePHP Application:
Creating the Blog database, Cake Database Configuration, Create a Post Model, Create a Posts Controller, Creating Posts Views, Adding Posts, Data Validation, Deleting Posts, Editing Posts, Routes.

Installing WordPress:
Creating a Database, Installing WordPress, Installing Themes, Downloading a Theme from the, WordPress Dashboard, Manually Installing a Theme, Adding Custom Header with Theme Name, Author, etc.

Setting Up Your WordPress.com Account:
Creating an Account on WordPress or at your own website/localhost, Logging Into Your Account, Writing Your First Post with little explanation, Customizing Your Account, Personal Settings, General Settings

Changing Themes (How the Blog Looks)

Widgets, Editors, Writing Posts, Adding a Post, Using the Visual Editor, Adding Hyperlinks, Categories, Tags, & Reading/Writing Settings, Using Categories and Tags, Managing Categories and Tags, Controlling the Number of Posts That Are Displayed, Understanding Comments, Managing and Moderating Comments, Trackbacks and Pingbacks

Making Pages

Adding and Deleting a Page, Pasting from Text Files, Changing the Page Order, Adding and Managing Media, Adding a Photo, Adding a Video, Adding Other Content (.pdf, .doc, etc.), Managing Uploaded Content, Media Settings, Working with Links, Adding Links, Managing Links

Appearance Customization

Changing the Header Image, Customizing the Sidebar with Widgets, Previewing Custom Fonts, Using the Dashboard, Managing Recent Comments, Tracking Statistics, Customizing the Dashboard's Appearance, Installing some important plugins,

SEO Ultimate

Fast Secure Contact Form, Efficient Related Posts, Wordpress Backup to dropbox, WP-DB-Backup, WP-Polls, WP Survey and Quiz Tool, Subscribe to comments, Share button by lockerz Statpress Visitors, Google XML sitemaps, Social Login, First Visit Message

Reference Books:

1. PHP : The Complete Reference 1st Edition, Authored By: Steven Holzner, Publisher: Tata McGraw - Hill Education (2007)
2. HTML5 Black Book: Covers Css3, Javascript,XML, XHTML, Ajax, PHP And Jquery (With CD), Author: Kogent Learning Solutions Inc., Publisher: Dreamtech Press (2011)
3. Web Technologies Black Book : HTML, JavaScript, PHP, Java, JSP, XML and AJAX (With CD), Authored By: Kogent Learning Solutions Inc., Publisher: Dreamtech Press (2012)
4. Head First Ajax 1st Edition, Author: Rebecca M. Riordan, Publisher: Shroff O Reilly (2008)
5. CakePHP 1.3 Application Development Cookbook, Author: Mariano Lglesias, Publisher: Packt (2011)
6. Building PHP Applications With Symfony, CakePHP, And Zend, Framework, Author: Bartosz Porebski Karol Przystalski Leszek Nowak, Publisher: Wiley India Pvt Ltd (2011)
7. Beginning CakePHP: From Novice to Professional 1st Edition, Author: David Golding, Publisher: Apress (2008)
8. Professional Wordpress: Design And Development Author: Hal Stern David Damstra Brad Williams, Publisher: Wiley India Pvt Ltd (2010)
9. WordPress MU 2.8 Beginner's Guide Author: Lesley A. Harrison Publisher: Packt (2010)
10. The Practitioner's Guide to Rapid Improvements Author: Alan A. Harrison, Publisher: Authorhouse (2010) .

Bachelors in Internet and Mobile Technologies
(Four Years Degree Course) (Semester–III)

IMT-305: PRACTICAL BASED ON JAVA AND ANDROID

Max Marks: 50

Bachelors in Internet and Mobile Technologies
(Four Years Degree Course) (Semester–III)

IMT-306: PRACTICAL BASED ON ADVANCED PHP

Max Marks: 50

Bachelors in Internet and Mobile Technologies
(Four Years Degree Course) (Semester–III)

Paper: ENVIRONMENTAL STUDIES-I (Compulsory)

Theory Lectures: 1.5 Hours/ Week **Max. Marks: 50**
Time of Examination: 3 Hours

Section A (15 Marks): It will consist of five short answer type questions. Candidates will be required to attempt three questions, each question carrying five marks. Answer to any of the questions should not exceed two pages.

Section B (20 Marks): It will consist of four essay type questions. Candidates will be required to attempt two questions, each question carrying ten marks. Answer to any of the questions should not exceed four pages.

Section C (15 Marks): It will consist of two questions. Candidate will be required to attempt one question only. Answer to the question should not exceed 5 pages.

1. **The multidisciplinary nature of environmental studies:**
- Definition, scope & its importance.
- Need for public awareness.

2. **Natural resources**:
- Natural resources and associated problems:
  - **a) Forest Resources**: Use of over exploitation, deforestation, case studies. Timber extraction, mining, dams and their effects on forests and tribal people.
  - **b) Water Resources**: Use and over-utilization of surface and ground water, floods, drought, conflicts over water, dams-benefits and problems.
  - **c) Mineral Resources**: Use and exploitation, environmental effects of extracting and using mineral resources, case studies.
  - **d) Food Resources**: World food problems, change caused by agriculture and overgrazing, effects or modern agriculture, fertilizer-pesticide problem, salinity, case studies.
  - **e) Energy Resources**: Growing of energy needs, renewable and non-renewable energy resources, use of alternate energy sources, case studies.
  - **f) Land Recourses**: Land as a resource, land degradation, soil erosion and desertification.
    - Role of an individual in conservation of natural resources.
    - Equitable use of resources for sustainable lifestyles.

3. **Ecosystem:**
- Concept of an ecosystem.
- Structure and function of an ecosystem.
- Producers, consumers and decomposers.
- Energy flow in the ecosystem.
- Ecological succession.
- Food chains, food webs and ecological pyramids.

- Introduction, types, characteristic features, structure and function of the following ecosystems:
  a. Forest ecosystem
  b. Grassland ecosystem
  c. Desert ecosystem
  d. Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries)

4. Social Issues and Environment:

- From unsustainable to sustainable development.
- Urban problems related to energy.
- Water conservation, rain water harvesting, watershed management.
- Resettlement and rehabilitation of people; its problems and concerns. Case studies.
- Environmental ethics: Issues and possible solutions.
- Climate change, global warning, acid rain, ozone layer depletion, nuclear accidents and holocause. Case studies.
- Wasteland reclamation.
- Consumerism and waste products.
- Environmental Protection Act:
  - Air (prevention and Control of Pollution) Act.
  - Water (prevention and Control of Pollution) Act.
  - Wildlife Protection Act.
  - Forest Conservation Act.
- Issues involved in enforcement of environmental legislation.
- Public awareness.

References/Books:

1. Agarwal, K. C. 2001. Environmental Biology, Nidhi Publications Ltd. Bikaner.
2. Bharucha, E. 2005. Textbook of Environmental Studies, Universities Press, Hyderabad.
3. Down to Earth, Centre for Science and Environment, New Delhi.
4. Jadhav, H. & Bhosale, V. M. 1995. Environmental Protection and Laws. Himalaya Pub.
5. Joseph, K. and Nagendran, R. 2004. Essentials of Environmental Studies, Pearson Education (Singapore) Pte. Ltd., Delhi.
6. Kaushik, A. & Kaushik, C. P. 2004. Perspective in Environmental Studies, New Age International (P) Ltd, New Delhi.
7. Miller, T. G. Jr. 2000. Environmental Science, Wadsworth Publishing Co.
8. Sharma, P. D. 2005. Ecology and Environment, Rastogi Publications, Meerut.
9. Booklet on Safe Driving. Sukhmani Society (Suvidha Centre), District Court Complex, Amritsar
10. Kanta, S., 2012. Essentials of Environmental Studies, ABS Publications, Jalandhar.

Bachelors in Internet and Mobile Technologies
(Four Years Degree Course) (Semester–IV)

SEMESTER SYSTEM
SCHEME

Semester – IV:

Paper No.	**Paper**	**M. Marks**
IMT–401	Major Project Based on Web Technologies	400
	* Environmental Studies – II (Compulsory)	50

* Marks of Paper EVS will not be included in Grand Total.

Bachelors in Internet and Mobile Technologies
(Four Years Degree Course) (Semester–IV)

IMT–401: MAJOR PROJECT BASED ON WEB TECHNOLOGIES

Marks: 400

General Instructions:

1. A software module based on the work done in the entire course is to be developed.

2. The soft copy of the module shall be submitted to the College/Institute till April 30.

3. The software module shall be developed in groups, consisting of at most two students in a group.
4. The respective college shall depute guide(s)/supervisor(s) under whose supervision the software module shall be developed. The guide/supervisor shall clarify that the work done is original & authenticated. The certificate found to be incorrect at any stage shall attract the proceedings against all the stakeholders, as per the University rules.
5. The evaluation of the module shall be done as per the common ordinance of UG/PG w.e.f. 2012-2013 under semester system.

Bachelors in Internet and Mobile Technologies
(Four Years Degree Course) (Semester–IV)

Paper: ENVIRONMENTAL STUDIES-II

(Compulsory)

Theory Lectures: 1.5 Hours/ Week **Max. Marks: 50**
Time of Examination: 3 Hours

Section A (15 Marks): It will consist of five short answer type questions. Candidates will be required to attempt three questions, each question carrying five marks. Answer to any of the questions should not exceed two pages.
Section B (20 Marks): It will consist of four essay type questions. Candidates will be required to attempt two questions, each question carrying ten marks. Answer to any of the questions should not exceed four pages.
Section C (15 Marks): It will consist of two questions. Candidate will be required to attempt one question only. Answer to the question should not exceed 5 pages.

1. Biodiversity and its Conservation:

- Definition: Genetic, species and ecosystem diversity.
- Biogeographical classification of India.
- Value of Biodiversity: Consumptive use; productive use, social, ethical, aesthetic and option values.
- Biodiversity of global, National and local levels.
- India as mega-diversity nation.
- Hot-spots of biodiversity.
- Threats to Biodiversity: Habitat loss, poaching of wild life, man wildlife conflicts.
- Endangered and endemic species of India.
- Conservation of Biodiversity: In situ and Ex-situ conservation of biodiversity.

2. Environmental Pollution:

- Definition, causes, effects and control measures of:
  a) Air Pollution
  b) Water Pollution
  c) Soil Pollution
  d) Marine Pollution
  e) Noise Pollution
  f) Thermal Pollution
  g) Nuclear Hazards
  h) Electronic Waste
- Solid Waste Management: Causes, effects and control measures of urban and industrial wastes.
- Role of an individual in prevention of pollution.
- Pollution case studies.
- Disaster Management: Floods, Earthquake, Cyclone and Landslides.

3. Human population and the environment

- Population growth, variation among nations.
- Population explosion-Family welfare programme.
- Environment and human health.
- Human rights.
- Value education.
- HIV/AIDS.
- Women and child welfare.
- Role of information technology in environment and human health.
- Case studies.
- Road Safety Rules & Regulations**:** Use of Safety Devices while Driving, Do's and Don'ts while Driving, Role of Citizens or Public Participation, Responsibilities of Public under Motor Vehicle Act, 1988, General Traffic Signs.
- Accident & First Aid**:** First Aid to Road Accident Victims, Calling Patrolling Police & Ambulance.

4. Field Visits:

- Visit to a local area to document environmental assets–river/forest/grassland/hill/ mountain.
- Visit to a local polluted site–Urban/Rural/Industrial/Agricultural.
- Study of common plants, insects, birds.
- Study of simple ecosystems–pond, river, hill slopes etc.

Note: In this section the students will be required to visit and write on the environment of an area/ ecosystem/vi1lage industry/disaster/mine/dam/agriculture field/waste management/ hospital etc. with its salient features, limitations, their implications and suggestion for improvement.

References/Books:

1. Agarwal, K. C. 2001. Environmental Biology, Nidhi Publications Ltd. Bikaner.
2. Bharucha, E. 2005. Textbook of Environmental Studies, Universities Press, Hyderabad.
3. Down to Earth, Centre for Science and Environment, New Delhi.
4. Jadhav, H. & Bhosale, V. M. 1995. Environmental Protection and Laws. Himalaya Pub.
5. Joseph, K. and Nagendran, R. 2004. Essentials of Environmental Studies, Pearson Education (Singapore) Pte. Ltd., Delhi.
6. Kaushik, A. & Kaushik, C. P. 2004. Perspective in Environmental Studies, New Age International (P) Ltd, New Delhi.
7. Miller, T. G. Jr. 2000. Environmental Science, Wadsworth Publishing Co.
8. Sharma, P. D. 2005. Ecology and Environment, Rastogi Publications, Meerut.
9. Booklet on Safe Driving. Sukhmani Society (Suvidha Centre), District Court Complex, Amritsar
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