FACULTY OF SCIENCE
SYLLABI
FOR
Bachelor of Computer Applications
1st & 2nd Semester
FOR
EXAMINATIONS 2014-2015
### Scheme of Examinations 2014-2015

#### First Semester

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Subject</th>
<th>LT/Week</th>
<th>Theory Marks</th>
<th>Internal Assessment</th>
<th>Exam. Hours</th>
<th>Paper Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>English (C) – A</td>
<td>6</td>
<td>90</td>
<td>10</td>
<td>3</td>
<td>BCA-101</td>
</tr>
<tr>
<td>2*</td>
<td>Panjabi/History &amp; Culture of Punjab – A</td>
<td>6</td>
<td>90</td>
<td>10</td>
<td>3</td>
<td>BCA-102</td>
</tr>
<tr>
<td>3.</td>
<td>Mathematics in Computer Science - I</td>
<td>6</td>
<td>90</td>
<td>10</td>
<td>3</td>
<td>BCA-103</td>
</tr>
<tr>
<td>5.</td>
<td>Computing Software</td>
<td>6</td>
<td>90</td>
<td>10</td>
<td>3</td>
<td>BCA-104</td>
</tr>
<tr>
<td>6.</td>
<td>Computer Lab.: Based on BCA - 104</td>
<td>12</td>
<td>90</td>
<td>10</td>
<td>4</td>
<td>BCA-105</td>
</tr>
</tbody>
</table>

#### Second Semester

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Subject</th>
<th>LT/Week</th>
<th>Theory Marks</th>
<th>Internal Assessment</th>
<th>Exam. Hours</th>
<th>Paper Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.</td>
<td>English (C) – B</td>
<td>6</td>
<td>90</td>
<td>10</td>
<td>3</td>
<td>BCA-201</td>
</tr>
<tr>
<td>8*</td>
<td>Panjabi/History &amp; Culture of Punjab - B</td>
<td>6</td>
<td>90</td>
<td>10</td>
<td>3</td>
<td>BCA-202</td>
</tr>
<tr>
<td>9.</td>
<td>Mathematics in Computer Science - II</td>
<td>6</td>
<td>90</td>
<td>10</td>
<td>3</td>
<td>BCA-203</td>
</tr>
<tr>
<td>11.</td>
<td>Computer Lab.: Based on BCA-204</td>
<td>12</td>
<td>90</td>
<td>10</td>
<td>4</td>
<td>BCA-205</td>
</tr>
</tbody>
</table>

* Punjabi /History & Culture of Punjab A& B

The Environment & Road Safety Education is a compulsory qualifying paper, which the students have to study in the B.Sc. 1st year(2nd Semester). If the student/s failed to qualify the paper during the 2nd Semester, he/she/they be allowed to appear/qualify the same in the 4th or 6th Semester/s.
FIRST SEMESTER

BCA -101: English (Compulsory)

M.Marks: 100
Theory: 90
Int.Assess: 10

Book Prescribed: Colours of Expression by Harbhajan Singh published by Publication Bureau, Panjab University, Chandigarh

Section A

1) Short Stories (1 & 2)

One essay type question on summary/Character/Incident (one out of two with internal choice) 15 marks

II) Prose (1 to 3)

Long essay type question on Summary/Theme (one out of two with internal choice) 15 marks

III) Poetry (1 to 6) 15 marks

Summary (one out of two with internal choice) 5 marks
Short Questions (two out of three) 5 marks
Reference to the Context (one out of two with internal choice) 5 marks

Section B

1) Word formation from Prose and Stories and their use in sentences (5 out of 8) 10 marks

2) Use of textual words and idioms in sentences (5 out of 8) 10 marks

3) Translation from Hindi/Punjabi to English (a small Paragraph) 10 marks

OR

For Foreign Students (Paraphrase of Poetry Passage)

4) Official, Business and Letters to the Editors 15 marks
कथावृत्ति अध्याय ।

1. आपूर्तिकर्म वर्णित मंगल भुजाण विंच्चे भुजाण ममितु विकाशिक्षा (ची ची ची ची)
2. चेतनी भान्या भुजाण भाग लघु भाग विंच्चे भाग (ची ची ची)
3. विषय विंच्चे भुजाण ममितु विकाशिक्षा (ची ची ची)
4. विषय विंच्चे भाग लघु भाग (विषय विंच्चे ची)
5. विषय विंच्चे लघु भाग, विषय भाग मंगल भाग (ची ची ची ची ची ची)
6. विषय भाग: सूत्रम, सहितकथानित भाग भाग भाग भाग भाग (500 मजर उंच)
7. से विषय विंच्चे ची ची ची ची ची ची ची

कथावृत्ति हरी एनां प्रबन्धन विंच्चे विंच्चे विंच्चे विंच्चे विंच्चे विंच्चे विंच्चे विंच्चे विंच्चे विंच्चे विंच्चे विंच्चे विंच्चे विंच्चे विंच्चे विंच्चे विंच्चे विंच्चे विंच्चे विंच्चे विंच्चे विंच्चे विंच्चे विंच्चे विंच्चे विंच्चे विंच्चे विंच्चे विंच्चे विंच्चे

भाषी वीर सिंह, वी. मतल सिंह, अभिनव पीवर्म, मेंट वीर मेंट, बुधवार मेंट बिची भाग मेंट सिंह यीद।

लेख: 1. टैगम्बर कक्षी संबंधे भें भें दीवींद्र।
2. विज्ञानीय कक्षी 25-30 भिडियाथ्रियां चा बड़ाहुंग भागे वड़े भें भें डिजिट वेब दीवींद्र।
3. वड़े भें 6-9 दीवींद्र।
OR

HISTORY AND CULTURE OF PUNJAB

INSTRUCTIONS FOR THE PAPER—SETTER AND CANDIDATES: (FOR PAPER in semester 1 AND 2)

(6 credit course)

1. The syllabus has been divided into four Units. There shall be 9 questions in all. The first question is compulsory and shall be short answer type containing 15 short questions spread over the whole syllabus to be answered in about 25 to 30 words each. The candidates are required to attempt any 9 short answer type questions carrying 18 marks i.e. 2 marks of each. Rest of the paper shall contain 4 units. Each Unit shall have two essay type questions and the candidate shall be given internal choice of attempting one question from each Unit-IV in all. Each question will carry 18 marks.

2. For private candidates, who have not been assessed earlier for internal assessment, the marks secured by them in theory paper will proportionately be increased to maximum marks of the paper in lieu of internal assessment. The paper-setter must put note (2) in the question paper.

3. One question from Unit-IV shall be set on the map.

Explanation:

1. Each essay type question would cover about one-third or one-half of a topic detailed in the syllabus.
2. The distribution of marks for the map question would be as under:
   Map : 10 Marks
   Explanatory Note : 08 Marks

   In case a paper setter chooses to set a question of map on important historical places, the paper setter will be required to ask the students to mark 5 places on map of 2 marks each and write explanatory note on any four of 2 marks each.

3. The paper-setter would avoid repetition between different types of question within one question paper.

Paper 1: Max. Marks : 100
           Theory    : 90
           Internal Assessment : 10
           Time            : 3 Hours

Objectives: To introduce the students to the history of Punjab region.
Pedagogy: Lectures, library work and discussions.
UNIT I

2. Vedic Age: socio-economic life; development of caste; position of women.
3. Religion: vedic religion; impact of Buddhism and Jainism on the region.

UNIT II

4. Society and Culture c. 1000 A.D.: Socio-economic life; religious life; education
5. Cultural Reorientation: main features of Bhakti; origin and development of Sufism

UNIT III

9. Institution of Khalsa: new baptism; significance

UNIT IV

11. Society and Culture under Maharaja Ranjit Singh: social mobility; painting and architecture; literature.

Suggested Readings:

5. Basham, A.L : The Wonder That was India, Rupa Books, Calcutta (18th rep.), 1992
6. Sharma, B.N : Life in Northern India, MunshiRam Manohar Lal, Delhi, 1966
7. Singh, Kirpal : History and Culture of the Punjab, Part II(Medieval Period), Publication Bureau, Punjabi University, Patiala 1990(3rd edn.).


13. Note: The following categories of the students shall be entitled to take option of History & Culture of Punjab in lieu of Punjabi as compulsory subject:

A. That the students who have not studied Punjabi upto class 10th.
B. Ward of / and Defence Personnel and Central Govt. Employee/ Employees who are transferrable on all India basis.
C. Foreigners
Paper Code : BCA - 103

Paper Title : Mathematics in Computer Science-I

Theory Marks : 90       Number of Lectures : 60
(45 minutes duration)

Objectives : To provide basic mathematical foundation required for various computer science courses.

Note : (i) The syllabus of this paper has been divided into four sections.

(ii) Examiner will set total nine questions comprising two questions from each Section and one compulsory question of short answer type covering whole syllabi.

(iii) The students are required to attempt one question from each Section and the entire Compulsory question.

(iv) All questions carry equal marks, unless specified.

(v) The student can use only Non-programmable & Non-storage type of Calculator.

SECTION-A

1. Fundamental Principles of Counting :
   Concept of c (n, r). Binomial Theorem: Statement only for positive index, general and middle terms. Binomial Theorem for any index (Without Proof) applications of Binomial Theorem for approximation and properties of Binomial Coefficients.

SECTION-B

2. Trigonometry-I :
   Trigonometric Ratios of allied angles, Trigonometric ratios of Compound angles or addition and subtraction formulae.

SECTION-C

3. Trigonometry-II :
   Transformation Formulae, Trigonometric ratios of multiple angles.

SECTION-D

4. Limit and Continuity :
   Rules for finding Limits, Infinite Limits, Continuity at a point, Rules of continuity, Continuity on an Interval.

References :

Objective: The objective of this course is to familiarize students with Fundamentals of Information Technology and its applications.

Note:
(i) The syllabus of this paper has been divided into four sections.
(ii) Examiner will set total nine questions comprising two questions from each Section and one compulsory question of short answer type covering whole syllabi.
(iii) The students are required to attempt one question from each Section and the entire Compulsory question.
(iv) All questions carry equal marks, unless specified.
(v) The student can use only Non-programmable & Non-storage type of Calculator.

SECTION – A
1. **Computer Appreciation**: Introduction, characteristics of computer; History of computers; classification of computers on size, architecture and chronology; Applications of computers; commonly used terms—Hardware, Software, Firmware. Types of software: System and Application software; Computer Architecture and organisation; Input, Process and Output; Representation of information: BIT, BYTE, Memory, Memory size; Units of measurement of storage; Input/Output devices; Secondary storage devices; Programming Languages: Generation of Languages; Translators - Interpreters, Compilers, Assemblers and their comparison. DOS : Versions of
   **DOS**: Booting sequence; Warm and Cold reboot; Concept of File and directory, Redirecting command input and output pipes, Wildcard characters, Types of DOS commands: Internal and External; Internal Commands: DIR, MD, CD, CLS, COPY, DATE, DEL, PATH, PROMPT, REN, RD, TIME, TYPE, VER, VOL; External Commands: XCOPY, ATTRIB, BACKUP, RESTORE, FIND, SYS, FORMAT, CHKDSK, DISKCOPY, LABEL, MOVE, TREE, DELTREE, DEFRAG, SCANDISK, UNDELETE. Batch Files: Introduction to simple batch files; Introduction to CONFIG.SYS and AUTOEXEC.BAT files.
   (No. of Periods : 15)

SECTION-B

   Word Processing Package: Basics of Word Processing; Opening and Closing of documents; Text creation and Manipulation; Finding and replacing text, Printing of document, Formatting of text; Margin setting, Adding Borders and shading, Adding Headers and Footers, Setting up Multiple columns, Working with tables, Spell check, Grammar facility, Autotext, language setting and thesaurus; Mail merging. **Installation of Word Processing Software**.
   (No. of Periods : 15)

SECTION-C
3. **Spreadsheet Package**: Worksheet Basics, Data Entry in Cells : Entry of numbers, text and formulae, Moving data in a worksheet, Moving around in a worksheet, Selecting Data Range, Using the Interface (Toolbars, Menus), Editing Basics, Working with workbooks,

Presentation Packages: Basics, General Features, Creating a presentation, Incorporation of Animation, Installation of Presentation software.

(No. of Periods : 15)

SECTION-D

4. Internet and WWW: Evolution of Internet, services provided on Internet, Access Methods, Future of Internet, Fundamentals of WWW, HTML: Introduction to HTML, Building blocks of HTML, lists, links, images, tables, frames, forms layers, HTML editor: Frontpage, Dreamweaver.

(No. of Periods : 15)

References:


Paper Code : BCA -105
Paper Title : Computer Lab.-1 Based on BCA - 104
Theory Marks : 90
SECOND SEMESTER

BCA-201 : English (Compulsory)

M.Marks: 100
Theory: 90
Int.Assess: 10

Book Prescribed: **Colour of Expression** by Harbhajan Singh published by Publication Bureau, Panjab University, Chandigarh

Section A

1) **Short Stories** (3-5)

One essay type question on summary/Character/Incident
(one out of two with internal choice)  
15 marks

2) **Prose** (4-5)

Long essay type question on Summary/Theme
(one out of two with internal choice)  
15 marks

3) **Poetry** (7-11) 15 marks

Summary (one out of two with internal choice)  
5 marks

Short Questions (two out of three)  
5 marks

Reference to the Context (one out of two with internal choice)  
5 marks

Section B

1) **Paragraph Writing** (Descriptive and Narrative)  
10 marks

2). Use of textual words and idioms in sentences  
(5 out of 8)  
10 marks

3). Translation from Hindi/Punjabi to English  
(isolated sentences)  
10 marks

OR

For Foreign Students (Paraphrase of Poetry Passage)

4) Transformation of all types (15 out of 15)  
15 marks
पंजाबी राजस्थानी – बी.एम.जी

बी.एम.जी. काठा बोध (अभियुक्त/भवी 2015) दे विभागित सूची

प्रमेयता दृष्टा

संख्या: 3 पृष्ठ

तुल्य अंक: 50

प्रिंटर अंक: 45

प्रिंटर अंक: 5

विषय

1. अपूर्वक धरार नमिख, मंग. डा. ओम ओम. दूर, पुरामाव: पंकथा पूलीचरित्री प्रवक्तवेस्तिं विशुचि, वंडवालु (पंकथ वरी: उज निध, ओम ओम. भूमा, काइ दुनान घटालची, प्रमा, वडवीड पुडव)
2. भाषा केव (In Katha Bodh only 6 Chapters, 10, 11, 12, 13, 14, 17), पुरामाव: पंकथा पूलीचरित्री प्रवक्तवेस्तिं विशुचि, वंडवालु

युजिंट अभे धीर

1. अपूर्वक वार्ड लेख, मंगिक. विनंक धुमा विनंक किचरिख (दे विचरिख विचरिख) 5 अंक
2. दे वंडवाला दे मधुन अभे बंडवी बंडवी (दे विचरिख विचरिख) 5 अंक
3. वाहर केव विचरिख पुरामा किचरिख किचरिख (दे विचरिख विचरिख) 5 अंक
4. विचरि बंडवी दे मधुन (वाहर केव विचरिख) 5 अंक
5. विचरि हेमरु दे मोरा, अभस्म अभे वंडवाला (वाहर वे बंडवीवर दे विचरिख विचरिख) 10 अंक
6. पूज्या पंकथा दे पूज्या दे पूज्या दे (विभागित, वाह्रिक विस्तर दे वाह्र, पूज्या दे पूज्या) 10 अंक
7. भाषातीली दी अभस्म रॉम दे बांधा विचरि बंडवी (मंग विचरि बंधी पंकथ) 5 अंक

पंकथाचे मधुन दर्पण धरार पूज्या विचरि उंच विचरि देखण विचरिख उंच:

विचरि दुषण घटालची, प्रमा, वडवीड पुडव, वडवीड बंध मधु, भंडवी बंडवी, विभागित मंग मंग.

भाषातील पुज्याचे:
1. पंकथा मंघा पूज्या विभागित, पंकथा मंघा पूलीचरित्री टेक्स्ट धुंध बंधव, वंडवालु.
2. फांडम पंकथा विभागित, पुज्या विभागित, पंकथा मंघा पूलीचरित्री टेक्स्ट धुंध बंधव, वंडवालु.

सूत्र:
1. टेक्स्ट धरण की उंच दे दे प्रीतीश्रिय.
2. वबंधीतक धरण 25-30 विभागितवाची दा गाण्ड अभे उंच दे विचरि उंच प्रीतीश्रिय.
3. उंच दे 6+3=9 प्रीतीश्रिय.
OR

HISTORY AND CULTURE OF PUNJAB

INSTRUCTIONS FOR THE PAPER – SETTER AND CANDIDATES: (FOR PAPER in semester 1 AND 2)

1. The syllabus has been divided into four Units.

   There shall be 9 questions in all. The first question is compulsory and shall be short answer type containing 15 short questions spread over the whole syllabus to be answered in about 25 to 30 words each. The candidates are required to attempt any 9 short answer type questions carrying 18 marks i.e. 2 marks of each. Rest of the paper shall contain 4 units. Each Unit shall have two essay type questions and the candidate shall be given internal choice of attempting one question from each Unit-IV in all. Each question will carry 18 marks.

2. For private candidates, who have not been assessed earlier for internal assessment, the marks secured by them in theory paper will proportionately be increased to maximum marks of the paper in lieu of internal assessment.

   The paper-setter must put note (2) in the question paper.

3. One question from Unit-IV shall be set on the map.

Explanation:

1. Each essay type question would cover about one-third or one-half of a topic detailed in the syllabus.

2. The distribution of marks for the map question would be as under:

   Map : 10 Marks
   Explanatory Note : 08 Marks

   In case a paper setter chooses to set a question of map on important historical places, the paper setter will be required to ask the students to mark 5 places on map of 2 marks each and write explanatory note on any four of 2 marks each.

3. The paper-setter would avoid repetition between different types of question within one question paper.

Paper 1:

Max. Marks : 100
Theory : 90
Internal Assessment : 10
Time : 3 Hours

Objectives: To introduce the students to the history of Punjab region in Modern times.

Pedagogy: Lectures, library work and discussions.
UNIT I

1. Introduction of Colonial Rule: administrative changes; means of communication; western education.
2. Agrarian Development: Commercialization of agriculture; canalization and colonization.
3. Social Classes: agrarian groups; new middle classes

UNIT II

5. Socio Religious Reform Movements: activities of Arya Samaj; Singh sabhas; Ahmadiyas.
6. Development of Press & literature: growth of press; development in literature

UNIT III

7. Emergence Of Political Consciousness: Agrarian uprising 1907; Ghadar.
8. Gurudwara Reform Movement: Jallianwala Bagh; foundation of SGPC and Akali Dal; Morchas.
9. Struggle for Freedom: activities of revolutionaries - Babbar Akalis, Naujawan Bharat Sabha; participation in mass movements – non co-operation, civil disobedience, Quit India.

UNIT IV

10. Partition and its Aftermath: resettlement; rehabilitation
12. MAP: Major Historical places: Delhi, Kurukshetra, Jaito, Ferozepur, Ambala, Amritsar, Lahore, Ludhiana, Qadian, Jalandhar, Lyallpur, Montgomery.

Suggested Readings:

1. Singh, Kirpal: History and Culture of the Punjab, Part II (Medieval Period), Publication Bureau, Punjabi University, Patiala 1990 (3rd edn.).
Objectives: To provide basic mathematical foundation required for various computer science courses.

Note:
(i) The syllabus of this paper has been divided into four sections.
(ii) Examiner will set total nine questions comprising two questions from each section and one compulsory question of short answer type covering whole syllabi.
(iii) The students are required to attempt one question from each section and the entire Compulsory question.
(iv) All questions carry equal marks, unless specified.
(v) The student can use only Non-programmable & Non-storage type Calculator.

SECTION-A

1. Derivatives:
The derivative of a function, Calculating derivatives from the definition, Differentiability on an interval, Differentiation Rules, Rates of Change, Derivatives of Trigonometric Functions, The Chain Rule, Derivative of Implicit, Rational and Exponential Functions, Rolle’s theorem, Lagrange Mean Value Theorem.

SECTION-B

2. Integration-I:
Indefinite Integrals, Integration by substitution, Integration of Transcendental Functions: Inverse Functions, Natural Logarithm, The Exponential Function.

SECTION-C

3. Integration-II:
Integration by parts, Definite Integrals, Properties, Area under the curve.

SECTION-D

4. Matrix Operations:
Introduction and definition of matrix, types of matrices, Matrix addition, Subtraction and scalar multiplication, Matrix multiplication, Transpose of a matrix, adjoint of a matrix and inverse of a matrix, solution of system of linear equations, definition and properties of a determinant.

References:
Objectives: The objective of this course is to make the student understand programming language concepts, mainly control structures, reading a set of data, stepwise refinement, function and arrays. After completion of this course, the student is expected to analyze the real life problem and write programs in ‘C’ language to solve problems. The main emphasis of the course is on problem solving aspect.

Note: (i) The syllabus of this paper has been divided into four sections.

(ii) Examiner will set total nine questions comprising two questions from each Section and one compulsory question of short answer type covering whole syllabi.

(iii) The students are required to attempt one question from each Section and the entire Compulsory question.

(iv) All questions carry equal marks, unless specified.

(v) The student can use only Non-programmable & Non-storage type Calculator.

SECTION-A


(No. of Periods: 15)

SECTION-B


(No. of Periods: 15)

SECTION-C


(No. of Periods: 15)

SECTION-D


(No. of Periods: 15)
References:
2. Salaria, R. S.: Test Your Skills in C, Khanna Book Publishing Ltd.,
3. Salaria, R. S.: Problem Solving And Programming in C, Khanna

Paper Code: BCA - 205
Paper Title: Computer Lab.-2 Based on BCA - 204
Theory Marks: 90
ENVIRONMENT AND ROAD SAFETY EDUCATION (SEMESTER – II)

UNIT I (ENVIRONMENT)

Note: The syllabus has 15 topics to be covered in 25 hour lectures in total, with 2 lectures in each topic from 2 to 11 and one each for the topics 1 and 12 to 15.

1. Environment Concept:
   Introduction, concept of biosphere—lithosphere, hydrosphere, atmosphere; Natural resources—their need and types; principles and scope of Ecology; concepts of ecosystem, population, community, biotic interactions, biomes, ecological succession.

2. Atmosphere:
   Parts of atmosphere, components of air; pollution, pollutants, their sources, permissible limits, risks and possible control measures.

3. Hydrosphere:
   Types of aquatic systems. Major sources (including ground water) and uses of water, problems of the hydrosphere, fresh water shortage; pollution and pollutants of water, permissible limits, risks and possible control measures.

4. Lithosphere:
   Earth crust, Soil—a life support system, its texture, types, components, pollution and pollutants, reasons of soil erosion and possible control measures.

5. Forests:
   Concept of forests and plantations, types of vegetation and forests, factors governing vegetation, role of trees and forests in environment, various forestry programmes of the Govt. of India, Urban Forests, Chipko Andolan.

6. Conservation of Environment:
   The concepts of conservation and sustainable development, why to conserve, aims and objectives of conservation, policies of conservation; conservation of life support systems—soil, water, air, wildlife, forests.

7. Management of Solid Waste:
   Merits and demerits of different ways of solid waste management—open, dumping, landfill, incineration, resource reduction, recycling and reuse, vermicomposting and vermiculture, organic farming.

8. Indoor Environment:
   Pollutants and contaminants of the in-house environment; problems of the environment linked to urban and rural lifestyles; possible adulterants of the food; uses and harms of plastics and polythene; hazardous chemicals, solvents and cosmetics.

9. Global Environmental Issues:
   Global concern, creation of UNEP; Conventions on climate change, Convention on biodiversity; Stratospheric ozone depletion, dangers associated and possible solutions.

10. Indian Laws on Environment:
   Indian laws pertaining to Environmental protection : Environment (Protection) Act, 1986; General information about Laws relating to control of air, water and noise pollution. What to do to seek redressal.
11. **Biodiversity:**
   What is biodiversity, levels and types of biodiversity, importance of biodiversity, causes of its loss, how to check its loss; Hotspot zones of the world and India, Biodiversity Act, 2002.

12. **Noise and Microbial Pollution:**
   Pollution due to noise and microbes and their effects.

13. **Human Population and Environment:**

14. **Social Issues:**
   Environmental Ethics: Issues and possible solutions, problems related to lifestyle, sustainable development; Consumerisms and waste generation.

15. **Local Environmental Issues:**
   Environmental problems in rural and urban areas, Problem of Congress grass & other weeds, problems arising from the use of pesticides and weedicides, smoking etc.

**Practicals:**

Depending on the available facility in the college, a visit to Vermicomposting units or any other such non-polluting eco-friendly site or planting/caring of vegetation/trees could be taken.

**Examination Pattern:**

A qualifying paper of 50 marks comprising of fifty multiple choice questions (with one correct and three incorrect alternatives and no deduction for wrong answer or unattempted question), and of 1 hour duration.

The students have to obtain 33% marks to qualify the paper. The marks are not added/included in the final mark sheet.

**UNIT II (ROAD SAFETY)**

1. Concept and Significance of Road Safety.
2. Role of Traffic Police in Road Safety.
3. Traffic Engineering – Concept & Significance.
5. How to obtain Driving License.
7. Common Driving mistakes.
8. Significance of First-aid in Road Safety.
9. Role of Civil Society in Road Safety.
Note: Examination Pattern:

- The Environment and Road Safety paper is 70 marks.
- Seventy multiple choice questions (with one correct and three incorrect alternatives and no deduction for wrong or un-attempted questions).
- The paper shall have two units: Unit I (Environment) and Unit II (Road Safety).
- Unit II shall comprise of 20 questions with minimum of 1 question from each topics 1 to 10.
- The entire syllabus of Unit II is to be covered in 10 hours.
- All the questions are to be attempted.
- Qualifying Marks 33 per cent i.e. 23 marks out of 70.
- Duration of examination: 90 minutes.
- The paper setter is requested to set the questions strictly according to the syllabus.

Suggested Readings

2. Road Safety Signage and Signs (2011), Ministry of Road Transport and Highways, Government of India.

Websites:

(a) www.chandigarhpolice.nic.in
(b) www.punjabpolice.gov.in
(c) www.haryanapolice.gov.in
(d) www.hppolice.nic.in

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