FACULTY OF SCIENCE
SYLLABI
FOR
Bachelor of Computer Applications
1st & 2nd Semester
FOR
EXAMINATIONS, 2014-2015
OUTLINES OF TESTS, SYLLABI AND COURSES OF READING FOR BACHELOR OF COMPUTER APPLICATIONS FOR THE EXAMINATIONS OF 2014 – 2015

Scheme of Examination, 2014 - 2015

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Second Semester

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* 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) 15 marks

4) Official, Business and Letters to the Editors 15 marks
पंचत्रयी तपस्वी - भी मी. दे. - ●2

भी मी. दे. बाबा वर्त्त (संवत 2014) दे सहितिव्रत चक्री

मेमोराल तपस्वी

भरं: 3 पंडे

तुलच भंड: 50
भिन्नती: 45
हितस्वर आमेट: 5

मिलिन्द

1. आपूर्विक पंचत्रयी बच्चों द्वारा चंद्रबीजों विद्वद्वां रा आपीतेत
2. चंद्रबीजों पंचत्रयी बच्चों रा आपीतेत
3. चंद्रबीजों पंचत्रयी चंद्रबीजों रा मेंध मेध उं तत्तद्व वं जनाएँत

वेदन

1. आपूर्विक वार्षिक संवार, संव: दु व. भोग दु व. आग, बुध, पुंजबः पंचत्रयी बुधीमहीत विभूति, चंद्रीनातु (पारं के बची : बड़ी बीत मिश्र, पति गाय चंद्रिव, पुतल मिश्र, भंडर मिश्र, भंडर मिश्र, बंधु मिश्र, बंधु मिश्र)
2. वध वंश (In Katha Bodh only 6 Chapters, 1, 3, 6, 7, 8, 9), पुंजबः: पंचत्रयी बुधीमहीत बुधीमहीत विभूति, चंद्रीनातु।
3. तथ्य तत्तद्व
4. विस्मृतत

मुद्रित अधे वीवे

1. आपूर्विक वार्षिक संवार भंडर बीतिये पृष्ठीय मिश्रित विभूतिविभाग (देह बीतिये विभूति) 5 भेद
2. टेल विचुन एंग माल भंडर वेंची व्रम (देह बीतिये विभूति) 5 भेद
3. वध वंश बीतिये पृष्ठीय मिश्रित विभूतिविभाग (देह बीतिये विभूति) 5 भेद
4. बंद बुधीनातु एंग माल (वध वंश बीतिये) 5 भेद
5. बंद बुधीनातु अव माल वेंची व्रम (बड़ी बीतिये वेंची व्रम - देह बीतिये विभूति वंश) 10 भेद
6. भेद : मन्दिर, मन्दिरावध अव माल माल वर्त्त संशोधन (50नं माल वंश) 10 भेद
7. कंगड कोपी एंग बंजर भंडर बीती 5 भेद

भंडर चंद्रबीजों पंचत्रयी बीतिये छेत बीतिये बंद बुधीनातु बतः:

बंजर बीति मिश्र, पु. मंदिर मिश्र, अभिरत पौंड, मंदिर मिश्र मिश्र, बुधीमहीत मिश्र बुधी माल मंदिर मिश्र पीर।

संदेश
1. तेलवर संदेश उंडे दे दे पीलीपाय।
2. बंजर वर्त्त दही 25–30 विशिष्टवादीं एंग गाउँ अव उंडे दे छिड तेंट पीलीपाय।
3. उंडे दे 6+3=9 पीलीपाय।
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:

1. Joshi, L.M (ed.): History and Culture of the Punjab, Part-I, Publication Bureau, Punjabi University, Patiala, 1989 (3rd edn.)
2. Joshi, L.M and Singh Fauja (ed.): History and Culture of the Punjab, Vol. I, Punjabi University, Patiala, 1977
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 os 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 10<sup>th</sup>.
   B. Ward of / and Defence Personnel and Central Govt. Employee/Employees who are transferrable on all India basis.
   C. Foreigners
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, FIND, FIND, SYS, FORMAT, CHKDSK, DISKCOPY, LABEL, MOVE, TREE, DELTREE, DEFRAG, SCANISK, 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, Cell referencing; Formatting and Calculations: using Autofill, Working with Formulae, Efficient Data Display with Data formatting (number formatting, date formatting etc.), Working with Ranges, Worksheet Printing; Working with Graphs and Charts: Creating

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 :**


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**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**
ਸਕੀਸੀ ਖਾਸ਼ੀ - ਸੀ.ਐੱ.ਪੀ. - 22

ਸੀ.ਐੱ.ਪੀ. ਬਾਜਾ ਪਹਿਲਾਂ (ਅਪ੍ਰੈਲ/ਬਹੀਲ 2015) ਦੇ ਪ੍ਰਾਪਤਕ਼ ਕਹਿਣਾ

ਨਿਯਮਤਤ ਟੁਸੂਂ

ਸਮੂਹ: 3 ਪੇਟੀ

ਤੁਹਾਣੇ ਅੰਕ: 50

ਵਿਚੜਤੀ: 45

ਹਿੰਦੀਨਾਮਾਂ ਅਖੀਰਮੈਂ: 5

ਨਿਵੇਦਨ

1. ਆਪਣਾ ਪ੍ਰੀਤ ਬਾਜਾ ਦੀਆਂ ਨੀਲੀਆਂ ਚੂਟਕੂਲਾਂ ਖਿਚਕਾਲਾਂ ਦੇ ਅਧਿਕਾਰ
2. ਚੂਟਕੂਲਾਂ ਦੇ ਧਾਰਕੂਲਾਂ ਦੇ ਅਧਿਕਾਰ
3. ਚੂਟਕੂਲਾਂ ਦੇ ਲੋਕ ਦੇ ਸੂਚੀ ਮੀਟਿੰਗ ਦੇ ਤਹਾਨਾ / ਕਲਾਜ਼
4. ਸ਼੍ਰੀਮਾਨ

ਬੇਬਨ

1. ਆਪਣਾ ਵਰਗ ਸੰਗਾ ਮਸਾਦ, ਮਿੱਠ: ਡਾ. ਝੋਟ ਹੋਮ. ਹੁਲਵ, ਪੰਜਾਬ: ਪੰਜਾਬ ਪੁਰੀਭਵਚਿੱਤੀ ਸਾਲਸੀਸ਼ੀ ਸਵਿਚਾਰਕ, ਚੰਡੀਗੜ੍ਹ
2. ਬਾਜਾ ਪੰਜਾਬ (In Katha Bodh only 6 Chapters, 10, 11, 12, 13, 14, 17), ਪੰਜਾਬ: ਪੰਜਾਬ ਪੁਰੀਭਵਚਿੱਤੀ

ਪ੍ਰਫੀਟ ਅਨੇ ਬੀਬ

1. ਆਪਣਾ ਵਹਾਣ ਸੰਗਾ ਪ੍ਰਮਾਣਿਤ ਬਿਚੇ ਪੁਸਤਕ ਸਵਿਚਾਰਕ, ਦੀਦਾਹ ਸਵਿਚਾਰਕ
2. ਹੁਲਵ ਉੱਤੇ ਗਰਮੀ ਦੇ ਮਹਾ ਅਧਿਕਾਰ ਬਿਚੇ ਬਿਚੇ ਬਿਚੇ
3. ਬਾਜਾ ਪੰਜਾਬ ਪੁਰੀਭਵਚਿੱਤੀ
4. ਵਹਾਣ ਸੰਗਾ ਬਿਚੇ ਬਿਚੇ
5. ਬਿਚੇ ਬਿਚੇ ਸੇਨਾ ਵਹਾਣ, ਸਾਹਿਤਿ ਅਧਿਕਾਰ ਪੰਜਾਬ (ਹਲੀ ਉੱਤੇ ਵਹਾਣਵਾਲਾ - ਸੇਨਾ ਦੇ ਸੇਨਾ)
6. ਪੱਖਾ ਸੂਰੀ ਜੰਕਸ਼ਨ ਦੇ ਖੇਤਰ (ਸ਼ਕਤੀ ਸੇਨਾ ਕਾਦਰੀ, ਵਹਾਣ ਦੇ ਖੇਤਰ)
7. ਸ਼ਕਤੀ ਸੇਨਾ ਦੇ ਮਹਾ ਅਧਿਕਾਰ ਦੇ ਸਾਦੇ ਬਿਚੇ ਬਿਚੇ (ਜੋ ਹੁਲਵ ਮਹਾ ਅਧਿਕਾਰ)
8. ਸ਼ਕਤੀ ਸੇਨਾ ਦੇ ਮਹਾ ਅਧਿਕਾਰ ਦੇ ਸਾਦੇ ਬਿਚੇ (ਬਿਚੇ ਬਿਚੇ)

ਪੰਜਾਬ ਦੇ ਮਹਾ ਅਧਿਕਾਰ ਦੇ ਸਾਦੇ ਬਿਚੇ ਬਿਚੇ ਬਿਚੇ ਸੀਸ਼ੀ ਸਾਲਸੀਸ਼ੀ ਪੰਜਾਬ ਦੇ ਸਾਦੇ ਬਿਚੇ

ਸਕੀਸ਼ੀਆਂ ਪੁਸਤਕਾਂ:

1. ਪੰਜਾਬ ਸੰਗਾ ਪੰਜਾਬ ਸਾਨਸ਼ ਅਕਸ਼ਾਸ਼, ਪੰਜਾਬ ਸੰਗਾ ਪੁਰੀਭਵਚਿੱਤੀ ਟੈਕਸਟ ਬੁੱਧ ਚੇਵਾਦ, ਚੰਡੀਗੜ੍ਹ।
2. ਬਾਜਾ ਪੰਜਾਬ ਸਵਿਚਾਰਕ, ਪੰਜਾਬ ਸੰਗਾ ਪੁਰੀਭਵਚਿੱਤੀ ਟੈਕਸਟ ਬੁੱਧ ਚੇਵਾਦ, ਚੰਡੀਗੜ੍ਹ।

ਵਿਸ਼ੇਸ਼:
1. ਟੈਕਸਟ ਚੇਵਾਦ ਬੁੱਧ ਵਿੱਚ ਦੇ ਪੀਡੀਆਈ।
2. ਸੀਥਾਇਤ ਁਤੇ ਸੁਸਿੱਟੀਅਈ 25-30 ਸਵਿਚਾਰਕਸ਼ੀਆਂ ਦੇ ਜਾਂਚ ਅਧਿਕਾਰ ਦੇ ਬੁੱਧ ਵਿੱਚ ਪੀਡੀਆਈ।
3. ਮੁੱਛੇ ਦੇ 6-3-9 ਪੀਡੀਆਈ।
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:

<table>
<thead>
<tr>
<th>Max. Marks</th>
<th>100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theory</td>
<td>90</td>
</tr>
<tr>
<td>Internal Assessment</td>
<td>10</td>
</tr>
<tr>
<td>Time</td>
<td>3 Hours</td>
</tr>
</tbody>
</table>

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 os the Punjab, Part II(Medieval Period), Publication Bureau, Punjabi University, Patiala 1990(3rd edn.).


**Paper Code**: BCA - 203  
**Paper Title**: Mathematics in Computer Science-II  
**Theory Marks**: 90  
**Number of Lectures**: 60  
**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.

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.

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

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

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](http://www.chandigarhpolice.nic.in)
(b) [www.punjabpolice.gov.in](http://www.punjabpolice.gov.in)
(c) [www.haryanapolic.in](http://www.haryanapolic.in)
(d) [www.hppolice.nic.in](http://www.hppolice.nic.in)