Faculty of Sports Medicine & Physiotherapy

Syllabus

For

BACHELOR OF VOCATION (B.VOC.)
(HEALTH CARE MANAGEMENT)
(Semester: I – IV)

Session: 2019-20

GURU NANAK DEV UNIVERSITY
AMRITSAR

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### SEMESTER – I:

<table>
<thead>
<tr>
<th>Paper No.</th>
<th>Paper</th>
<th>M. Marks</th>
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</thead>
<tbody>
<tr>
<td>Paper – I</td>
<td>Introduction to Hospital Industry</td>
<td>75</td>
</tr>
<tr>
<td>Paper – II</td>
<td>Human Anatomy and Physiology</td>
<td>75</td>
</tr>
<tr>
<td>Paper – III</td>
<td>Data Entry Using MS Word and MS Excel</td>
<td>75</td>
</tr>
<tr>
<td>Paper – IV</td>
<td>Basics of Medical Terminology – I</td>
<td>75</td>
</tr>
<tr>
<td>Paper – V</td>
<td>Communication Skills in English – I</td>
<td>50</td>
</tr>
<tr>
<td>Paper – VI</td>
<td>Punjabi (Compulsory) / ** ਪੰਜਾਬੀ ਪੰਜਾਬੀ /**</td>
<td>50</td>
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<tr>
<td>Paper – VII</td>
<td>* Drug Abuse: Problem, Management and Prevention (Compulsory Paper)</td>
<td>50</td>
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### SEMESTER – II:

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<tbody>
<tr>
<td>Paper – I</td>
<td>Descriptive Statistics</td>
<td>75</td>
</tr>
<tr>
<td>Paper – II</td>
<td>Basics of Medical Terminology – II</td>
<td>75</td>
</tr>
<tr>
<td>Paper – III</td>
<td>Front Office Management</td>
<td>75</td>
</tr>
<tr>
<td>Paper – IV</td>
<td>Medical Software Application – I (Practical)</td>
<td>75</td>
</tr>
<tr>
<td>Paper – V</td>
<td>Communication Skills in English – II (Th.35+Pr.15)</td>
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<tr>
<td>Paper – VI</td>
<td>Punjabi (Compulsory) / ** ਪੰਜਾਬੀ ਪੰਜਾਬੀ /**</td>
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Note: * Marks of this Paper will not be included in the Total Marks.
** (Special Paper in lieu of Punjabi Compulsory)
(For those students who are not domicile of Punjab)
## SEMESTER – III:

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<tr>
<td></td>
<td>General Education Component:</td>
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<tr>
<td>Paper – I</td>
<td>Fundamental of Management (Theory)</td>
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<tr>
<td>Paper – II</td>
<td>Health Economics (Theory)</td>
<td>50</td>
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<tr>
<td></td>
<td><strong>Skill Component:</strong></td>
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<tr>
<td>Paper – III</td>
<td>Basics of Finance in Health Care (Theory)</td>
<td>50</td>
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<tr>
<td>Paper – IV</td>
<td>Patient Behavior and Psychology (Theory)</td>
<td>50</td>
</tr>
<tr>
<td>Paper – V</td>
<td>Emerging Trends in Health Care (Theory)</td>
<td>50</td>
</tr>
<tr>
<td>Paper – VI</td>
<td>Medical Software Applications-2 (Practical)</td>
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## SEMESTER – IV:

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<tr>
<td></td>
<td>General Education Component:</td>
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<tr>
<td>Paper – I</td>
<td>Fundamentals of Accounting (Theory)</td>
<td>50</td>
</tr>
<tr>
<td>Paper – II</td>
<td>Making Decisions (Theory)</td>
<td>50</td>
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<tr>
<td></td>
<td><strong>Skill Component:</strong></td>
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</tr>
<tr>
<td>Paper – III</td>
<td>Quality Assurance(Theory)</td>
<td>50</td>
</tr>
<tr>
<td>Paper – IV</td>
<td>Ethical Issues in Health Care (Theory)</td>
<td>50</td>
</tr>
<tr>
<td>Paper – V</td>
<td>Nursing Administration-I (Theory)</td>
<td>50</td>
</tr>
<tr>
<td>Paper – VI</td>
<td>Training (Practical)</td>
<td>50</td>
</tr>
<tr>
<td>Paper – VII</td>
<td><em>(ESL-221): Environmental Studies</em></td>
<td>100</td>
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* Marks of EVS will not be included in the Total Marks

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BACHELOR OF VOCATION (B.VOC.) (HEALTH CARE MANAGEMENT)  
SEMESTER SYSTEM
Paper–I: INTRODUCTION TO HOSPITAL INDUSTRY

Time: 3 Hours
Max Marks: 75

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION-A
Concept of health and diseases: Definition of health, Dimension of health, Spectrum of health, Levels of prevention, and modes of intervention for diseases and condition.

SECTION-B
Introduction to Hospitality: What is Hospital, Etymology, Types of hospitals, Hospital as system, Hospital organization, overview on Healthcare facilities, scale and scope?

SECTION-C
Introduction to hospital Departments:
- Detailed clinical services
- Detailed support services
- Detailed utility services

SECTION-D
Current Trends in Healthcare Industry:
- Healthcare Industry- An Overview
- Changing Healthcare- Determinants

Current Trends:-
1. Medical Tourism or Medical Value Travel
2. Public Private Partnership (PPP)
3. Information Technology and Healthcare, Telemedicine, Video Conferencing, Bioinformatics, Robotic Surgery
4. Health Insurance and TPA’s

Resource Materials:
1. Powers Introduction to Management in The Hospital Industry by Wiley Blackwell
2. Introduction to Hospital and Health System Pharmacy Practice by David A Holford
4. Business Journals, Healthcare Status reports
Paper–II: HUMAN ANATOMY AND PHYSIOLOGY (Theory)

Time: 3 Hours  Max. Marks: 75

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION – A
Introduction to Human Biology: Cell, Tissues and Organs
Basic structure, function and common associated diseases of the following:
- Skeletal system- Bones, cartilage, tendons and ligaments
- Muscular system- skeletal muscles and smooth muscle throughout the body

SECTION – B
Basic structure, function and common associated diseases of the following:
- Circular system-Heart, blood vessels and blood
- Nervous system- Brain, spinal cord and peripheral nerves
- Respiratory system- Nose, trachea and lungs

SECTION – C
Basic structure, function and common associated diseases of the following:
- Digestive system- Mouth, esophagus, stomach, small and large intestines
- Excretory system- Kidneys, ureters, bladder and urethra
- Endocrine system- hypothalamus, pituitary, thyroid, pancreas and adrenal glands etc

SECTION – D
Basic structure, function and common associated diseases of the following:
- Reproductive system
- Lymphatic/ Immune system: Lymph, lymph nodes and vessels, white blood cells, T- and B-cells

Resource Materials:
1. Human Anatomy by B.D. Chaurasia
2. Anatomy and Physiology by Aggarwal Arya
3. Essentials of Medical Physiology by K. Sembulingam and Prema Sembulingam
4. Inderbir Singh, Textbook of Anatomy with Colour Atlas–Vol. 1,2,3 Jaypee Brothers
5. Text Book of Medical Physiology–Arthur Guyton (Mosby)
Paper–III: DATA ENTRY USING MS–WORD and MS–EXCEL

Time: 3 Hours  Max. Marks: 75

Note: Practical exam to be conducted by the external examiner.

Section – A
MS-Word: Overview, Creating, Saving, Opening, Importing, Exporting & Inserting files. Formatting pages, paragraphs and sections. Indents and outdates. Creating lists and numbering. Heading Styles, Fonts and size editing,

Section – B

Section – C

Section – D
Creating different formulas, 3D formulas, Copying and pasting formulas, conditional formatting and cell styles, creating worksheet charts, sharing workbook, tables, sorting data, filtering data, using what-if analysis, table related functions and making macros.

Suggested Readings:

Note: The latest Editions of The Books should be followed.
BACHELOR OF VOCATION (B.VOC.) (HEALTH CARE MANAGEMENT)
SEMESTER – I

Paper–IV: BASICS OF MEDICAL TERMINOLOGY-1 (THEORY)

Time: 3 Hours

Max.Marks: 75

Instructions for the Paper Setters:

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION – A
Building blocks of medical terminologies:
Roots
Prefixes
Suffixes
Pronunciation rules

SECTION – B
General body terminology
Medical terms related to different organ systems

SECTION – C
Medical terms related to Pharmacology
Prescriptions and OTC medications

SECTION – D
Medical terms related to Routes of administration
Medical terms related to Medication actions and effects and their Abbreviations

Resource Materials:
2. Basic Medical Terminology concepts by Marilyn White Wilson
Instructions for the Paper Setters:
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

The syllabus is divided in four sections as mentioned below:

**Section–A**
Reading Skills: Reading Tactics and strategies; Reading purposes–kinds of purposes and associated comprehension; Reading for direct meanings.

**Section–B**
Reading for understanding concepts, details, coherence, logical progression and meanings of phrases/expressions.

Activities:
- Comprehension questions in multiple choice format
- Short comprehension questions based on content and development of ideas

**Section–C**
Writing Skills: Guidelines for effective writing; writing styles for application, personal letter, official/business letter.

Activities:
- Formatting personal and business letters.
- Organising the details in a sequential order

**Section–D**
Resume, memo, notices etc.; outline and revision.

Activities:
- Converting a biographical note into a sequenced resume or vice-versa
- Ordering and sub-dividing the contents while making notes.
- Writing notices for circulation/boards

Recommended Books:
- *Oxford Guide to Effective Writing and Speaking* by John Seely.
- *English Grammar in Use* (Fourth Edition) by Raymond Murphy, CUP
BACHELOR OF VOCATION (B.VOC.) (HEALTH CARE MANAGEMENT)
SEMESTER – I

PAPER–VI: पैपर–VI (खण्ड–III)

माध्यम : 3 पृष्टे  
चूल्हा भाव : 50

पाठ–चूह अठै पाठ–प्रश्नवां

मैक्सिम–I

आउत अरुण (विकर जूता),
(भागः शृंगी वीर अठै विभाग विभाग विभाग)
उदाहरण रचना देव युवतीविद्वती, अभिभाषकः
(समवा मातृ देशभाषा, मातृ)

मैक्सिम–II

दिशांत साधन (दिशांत संघ में संघर्ष)
मैथुन, अ.अ.भाषा,
पैपर नामित पृष्ठांक, भावण्डा। (खण्ड 1 वे 6)
(तिथ्य ते मात्र, तिथ्य–मौली)

मैक्सिम–III

(क) पैपर उच्चरण

(ख) पैपर पढ़ वे पृष्ठांक दे उठाव।

मैक्सिम–IV

(क) पैपर प्रति पुस्तक : उदाहरण अभि, उदाहरण मधुक दे तिथिधि, मात्र, विभाषण,
मुख–मूख

(ख) पूर्व दौलतीर्थ : वंश दान दौलतीर्थ दुष्क, वंश दान दौलत–दौलत दान भूत, पैपर नामित पृष्ठांक दे प्रवंश–विश्व।

धार्मिक अध्ययन ठहरी उपादान

1. पृष्ठांक पूजा वे वह दौलत रखे। उद दौलत किस्में दे पृष्ठांक पूजा साधनी।
2. दिशांत साधन दे उदाहरण पृष्ठांक वहे उठे। उद दौलत किस्में दिश दौलत साधनी है।
3. उदाहरण पृष्ठांक लिखे ही दौलत किस्में बीच ना मचते है।
4. दौलत मैंट वहे दौलत सौंदर्य चमत्कार चने उं पृष्ठांक दी दौलत अथवा लेंग उं लेंग उठे दौलत
दौलत–पृष्ठांक दिश वह मचते दे।
BACHELOR OF VOCATION (B.VOC.) (HEALTH CARE MANAGEMENT)
SEMESTER – I

PAPER–VI: ਨਾਵਹਦੀ ਪੀਠਾਧਿ
(In lieu of Compulsory Punjabi)

ਸੰਖ਼ : 3 ਪੇਟੀ
ਚੁੱਕ ਅਂਕ : 50

ਮੈਵਾਰਨ-ਦੌੜ

ਪ੍ਰਫੁੱਲਤਪੱਤਦੀ, ਅਧਾਰ ਕੂਹ, ਪ੍ਰਫੁੱਲਤਪੱਤਦੀ ਦੁਆਰਾ ਇਹ ਐਂਟੇ ਪ੍ਰਫੁੱਲਤਪੱਤਦੀ ਨੁਹਾਂ (ਪ੍ਰਫੁੱਲਤਪੱਤਦੀ ਨਾਵਹਦੀ ਕੱਢ-ਮਾਰਦੀ)
ਕਲਾਵਾਸ (ਪ੍ਰਫੁੱਲਤਪੱਤਦੀ, ਪ੍ਰਫੁੱਲਤਪੱਤਦੀ, ਅੰਗ) : ਪ੍ਰਫੁੱਲਤਪੱਤਦੀ ਦੁਆਰਾ

ਮੈਵਾਰਨ-ਚੌਧਰੀ

ਪ੍ਰਫੁੱਲਤਪੱਤਦੀ ਮਾਦਰ-ਸਰਦਾਰ : ਪ੍ਰਫੁੱਲਤਪੱਤਦੀ ਨਾਵਹਦੀ (ਪ੍ਰਫੁੱਲਤਪੱਤਦੀ, ਪ੍ਰਫੁੱਲਤਪੱਤਦੀ, ਅੰਗ, ਅੰਗ, ਪ੍ਰਫੁੱਲਤਪੱਤਦੀ, ਅੰਗ, ਅੰਗ, ਪ੍ਰਫੁੱਲਤਪੱਤਦੀ)

ਮੈਵਾਰਨ-ਮੌਲੀ

ਹੀਂਦੂ ਦਰਮਿਆਨ ਦੀ ਪ੍ਰਫੁੱਲਤਪੱਤਦੀ ਮਾਦਰ-ਸਰਦਾਰ : ਜਾਨਾਦਾਰ, ਜਾਨਾਦਾਰ, ਜਾਨਾਦਾਰ, ਜਾਨਾਦਾਰ, ਜਾਨਾਦਾਰ, ਜਾਨਾਦਾਰ

ਮੈਵਾਰਨ-ਮੌਲੀ

ਉਹ ਦੇ ਜੋੜੇਦਾਰ ਦੇ ਰਾਹੀਂ, ਪਾਣੀ ਭਲੀ ਭਲੀ ਦੇ ਰਾਹੀਂ, ਭਾਵੀ ਦੇ ਰਾਹੀਂ, ਜੈਕਬ ਦੇ ਰਾਹੀਂ, ਜੀਵ ਦੇ ਰਾਹੀਂ ਉਹ ਜੀਵਣ ਮਾਦਰ-ਸਰਦਾਰ।

ਮੈਵਾਰਨ-ਰਾਜ

ਉਹ ਦੇ ਮੂੰਡ ਦੀਵਾਰ ਦੇ ਰਾਹੀਂ, ਪਾਣੀ ਭਲੀ ਭਲੀ ਦੇ ਰਾਹੀਂ, ਭਾਵੀ ਦੇ ਰਾਹੀਂ, ਜੀਵ ਦੇ ਰਾਹੀਂ ਉਹ ਜੀਵਣ ਮਾਦਰ-ਸਰਦਾਰ।

ਪ੍ਰਫੁੱਲਤਪੱਤਦੀ ਪੰਛੀ ਪਤਿਸਿਧਾਤਰੀ ਉਨਾਂਹਨਵਾਂ

1. ਪ੍ਰਫੁੱਲਤਪੱਤਦੀ ਦੇ ਦਰਮਿਆਨ ਦਾ ਜੀਵਣ ਦੋਹਤਰੀ। ਉਹ ਜੀਵਣ ਦੋਹਤਰੀ ਦੇ ਪ੍ਰਫੁੱਲਤਪੱਤਦੀ ਦੋਹਤਰੀ।
2. ਹੀਂਦੂ ਦਰਮਿਆਨੀ ਦੇ ਦਰਮਿਆਨ ਦੀ ਪ੍ਰਫੁੱਲਤਪੱਤਦੀ ਦੋਹਤਰੀ। ਉਹ ਜੀਵਣ ਦੋਹਤਰੀ ਦੀ ਪ੍ਰਫੁੱਲਤਪੱਤਦੀ ਦੋਹਤਰੀ।
3. ਉਹ ਪ੍ਰਫੁੱਲਤਪੱਤਦੀ ਦੇ ਦਰਮਿਆਨੀ ਦੋਹਤਰੀ।
4. ਹੀਂਦੂ ਦਰਮਿਆਨੀ ਦੇ ਦਰਮਿਆਨੀ ਦੋਹਤਰੀ ਦੀ ਪ੍ਰਫੁੱਲਤਪੱਤਦੀ ਦੋਹਤਰੀ ਦੀ ਪ੍ਰਫੁੱਲਤپੱਤਦੀ ਦੋਹਤਰੀ।

ਪ੍ਰਫੁੱਲਤਪੱਤਦੀ ਪੰਛੀ ਪਤਿਸਿਧਾਤਰੀ ਉਨਾਂਹਨਵਾਂ
PAPER–VI: Punjab History & Culture (From Earliest Times to C 320)
(Special Paper in lieu of Punjabi Compulsory)
(For those students who are not domicile of Punjab)

Time: 3 Hours Max. Marks: 50

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

Section–A

1. Physical features of the Punjab and its impact on history.
2. Sources of the ancient history of Punjab

Section–B

3. Harappan Civilization: Town planning; social, economic and religious life of the Indus Valley People.

Section–C

5. Social, Religious and Economic life during Rig Vedic Age.

Section–D

7. Teachings and impact of Buddhism
8. Jainism in the Punjab

Suggested Readings:

1. L. M Joshi (ed.), History and Culture of the Punjab, Art-I, Patiala, 1989 (3rd edition)
Instructions for the Paper Setters:
Eight questions of equal marks (specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

Section – A

Meaning of Drug Abuse:

Section – B

Consequences of Drug Abuse for:
- Family: Violence.
- Society: Crime.
- Nation: Law and Order problem.

Section – C

Management of Drug Abuse:
Medical Management: Medication for treatment and to reduce withdrawal effects.

Section – D

Psychiatric Management: Counselling, Behavioural and Cognitive therapy.
Social Management: Family, Group therapy and Environmental Intervention.
References:
Paper-I: DESCRIPTIVE STATISTICS (THEORY)

Time: 3 Hours

Max. Marks: 75

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

Section – A
Qualitative and quantitative observations, Measures of Central Tendency – Arithmetic Mean, Median and Mode, Position of averages. Graphical representation of data, Measures of dispersion – range, variance, mean deviation, standard deviation and coeff. of variation, Frequency distribution

Section – B
Introduction, Importance, Karl-Pearson’s Coefficient of Correlation, Spearman’s Rank Correlation Coefficient

Section – C

Section – D
Descriptive statistics, Comparison of means, T – tests, Analysis of Variance.

Text/References:
1. Methods in Biostatistics – Mahajan - J.P.
BACHELOR OF VOCATION (B.VOC.) (HEALTH CARE MANAGEMENT)
SEMESTER – II

Paper–II: BASICS OF MEDCAL TERMINOLOGY-II (THEORY)

Time: 3 Hours                                      Max.Marks:75

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION – A
Structure, recognition, analysis, definition and combination of medical terms from:
Roots
Prefixes
Suffixes and combining forms

SECTION – B
General terminology (procedures, diseases, treatment) related to the following body systems:- circulatory system, digestive system

SECTION – C
General terminology (procedures, diseases, treatment) related to the following body systems:- Respiratory System, Urinary System,

SECTION – D
General terminology (procedures, diseases, treatment) related to the following body systems:- obstetrics and gynecology

Resource Materials:
2. Basic Medical Terminology concepts by Marilyn White Wilson
3. Medical Terminology: A Programmed System Approach by Genevieve Love Smith,
   Phyllis E. Davis
BACHELOR OF VOCATION (B.VOC.) (HEALTH CARE MANAGEMENT)  
SEMESTER – II  

Paper–III: FRONT OFFICE MANAGEMENT

Time: 3 Hours  
Max. Marks: 75

Instructions for the Paper Setters:-  
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

Section – A

Front Office: Functions & Importance of front office, Front Office Staff Organisation Various sections of Front office Department, Staff requirement, Staff organization in the hospital, Functions of a reception, Selection of staff.

Section - B

Department Policies and Procedures: Content of the Module: OPD timings, Schedule, Registration, Billing, Report Delivery Process, Front Office Data Management, Effective Handling various problems of OPD’S

Section - C

Managing Front Office: Patient Problems: Patient Admission, Tele conversation, Telephone etiquettes, Increased Waiting time, Dissatisfaction with Quality of service and amenities, Doctors Complaints: Increased workload, less staff, increased workload

Section - D

Team Work in Front Office: Team Building, Importance of Team Work in Hospitals, Nature of scope in Team Work, Characteristics of Effective Team, Essentials of good team work

References:

Description & Objectives:
This module is designed to provide a comprehensive understanding of the medical software applications for the management and operation of health care information systems.

Objectives:
- Basic understanding of functioning of computers and its application in healthcare with a perspective on hospital operations.
- Create basic awareness on healthcare record systems and infrastructure.

Content of the Module:
- Introduction to HIS
- Concept of HIS
- Role of HIS
- Characteristics of HIS
- Pre Requisites of HIS
- Need & Importance of HIS
- Electronic Health Record (EHR) Vs Manual Records
- Computerized Patient Record System (CPRS)

Classroom sessions, practical sessions, industry visit to understand the use of medical software to IT department and medical records department of hospital.

References:
2. Use and Impact of Computer in Clinical medicine by James G. Anderson, Stephen J. Jay
3. Medical Informatics: Computer Applications in Health Care and Biomedicine by Edward Hance Shortlife, Leslie E. Perreault
BACHELOR OF VOCATION (B.VOC.) (HEALTH CARE MANAGEMENT)
SEMESTER – II

PAPER–V: COMMUNICATION SKILLS IN ENGLISH – II

Time: 3 Hours

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

Course Contents:

SECTION–A
Listening Skills: Barriers to listening; effective listening skills; feedback skills.
Activities: Listening exercises – Listening to conversation, News and TV reports

SECTION–B
Attending telephone calls; note taking and note making.
Activities: Taking notes on a speech/lecture

SECTION–C
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.
Activities: 1) Making conversation and taking turns
2) Oral description or explanation of a common object, situation or concept

SECTION–D
The study of sounds of English,
Stress and Intonation,
Situation based Conversation in English,
Essentials of Spoken English.
Activities: Giving Interviews

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 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.
PAPER-VI: पेपर (क्लासीफाइड)

मामला: 3 पृष्ठ
विषय अंक: 50

पाठ-सूची अन्दे पाठ-प्रमाण

मेवमृत-दे

आधुनिक अवलोकन (लघु पत्र)
(मंग. मुखिया ग्राहक अंदे विभाग निदेश मंधु)
लघु पत्र में पूरी तरह लिखित नहीं, अनौषधित।
(विभाग-मंधु, पाठ-युवक)

मेवमृत-दी

टिकितमाझ जाना (टिकितमाझ लेख-माझारी)
मंग. म.म.अंधक, पेपरखाँड पूर्णमाझ, त्योहार। (खंड 7 ते 12)
(विभाग, लिखित मैली)

मेवमृत-दी

(अ) पाठ-युवक अन्दे पाठ-युवक
(ब) पाठ-पत्र
(ब) पाठ-पत्र
(ब) पाठ-पत्र
(ब) विभाग अन्दे अधिकार

अंव-श्रृंखला अन्दे पूर्ववर्तित कट्टर उपायों

1. पूर्ण पेट्र से चादर बना खींचो। उत अन्दे लिच्चे दे पूर्ण पेट्र साजो।
2. हिंदीभाषाधीन हे विषय पूर्ण बनवे उठ। उत अन्दे लिच्चे दे पूर्ण लाभभावी हे।
3. उत्तर पूर्ण से विषय पुमेल उठ।
4. शेयर पूर्ण से विषय पुमेल चाहे उं पूर्ण से हंढँ भांड़ भें दंग उं दंग चाल हिंद-पूर्णसं हिन्द चाल विकर हे।
पाठ-चूह

मैवमल-दे

मकर मूड़ीयां : पहाड़ अठे दवड़ (ठुंड़, पहाड़र्थ, विज्ञान, विज्ञान, विज्ञान विज्ञान, मलेश्वर, जेवाल अठे विभिन्न)

मैवमल-सी

पैसाही अवध महज : भूसली नाट-पहाड़ (१) मापाट दव, मेहरवट दव अठे भिमसत दव (पहाड़ अठे दवड़)
(अ) भिमसत दव, पूर्णदाह दव अठे गुजानी दव (पहाड़ अठे दवड़)

मैवमल-भी

पेठुा उज़ाना
मेषाथ उज़ाना

मैवमल-ती

बिठती पेठ (उज़ानु अठे दवड़ी)
अखग अठे भुगड़े

अख-दैंड अठे वर्तिमान लहरी उपलब्धीगतह

1. पूर्ण पेठठे चाढ़ा दवा देखेतो। उत दवा दिच्छे ते पूर्ण पूँडे नरळो।
2. विज्ञानकाली दे उंगली पूर्ण पूशक बदल्ये उठा। उत दवा दिच्छे दिव पूपत प्रभाती ठै।
पैचं पूर्ण पूर्ण विके दी जना दिच्छे गीत ना मचवा ठै।
3. जलेश पूर्ण पेठठे पहाड़र्थ अठे उठा।
4. धेंड़ मैंट चमत हाला रेवत करते ता पूर्ण दिव दैंड अठे हेंड़ दें हेंड चाढ़ा दिव-पूर्णलं दिच्छ बद मचवा ठै।
PAPER–VI: Punjab History & Culture (C 321 to 1000 B.C.)
(Special Paper in lieu of Punjabi compulsory)
(For those students who are not domicile of Punjab)

Time: 3 Hours  Max. Marks: 50

Instructions for the Paper Setters:-

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

Section–A

1. Alexander’s Invasion and its Impact
2. Punjab under Chandragupta Maurya and Ashoka.

Section–B

3. The Kushans and their Contribution to the Punjab.
4. The Panjab under the Gupta Empire.

Section–C

5. The Punjab under the Vardhana Emperors
6. Socio-cultural History of Punjab from 7th to 1000 A.D.

Section–D

7. Development of languages and Education with Special reference to Taxila
8. Development of Art & Architecture

Suggested Readings:

1. L. M Joshi (ed), History and Culture of the Punjab, Art-I, Punjabi University, Patiala, 1989 (3rd Edition)
PAPER – VII: DRUG ABUSE: PROBLEM, MANAGEMENT AND PREVENTION
(Compulsory Paper)

Time: 3 Hours
Max. Marks: 50

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

Section – A
Prevention of Drug abuse:
Role of family: Parent child relationship, Family support, Supervision, Shaping values, Active Scrutiny.

Section – B
School: Counselling, Teacher as role-model. Parent-teacher-Health Professional Coordination, Random testing on students.

Section – C
Controlling Drug Abuse:
Media: Restraint on advertisements of drugs, advertisements on bad effects of drugs, Publicity and media, Campaigns against drug abuse, Educational and awareness program

Section – D
References:

BACHELOR OF VOCATION (B.VOC.) (HEALTH CARE MANAGEMENT)
SEMESTER – III

Paper –I: FUNDAMENTALS OF MANAGEMENT (THEORY)

Time: 3 Hours

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION-A
Management: Introduction – Meaning, nature and characteristics of Management – Scope and functional areas of management – Management as a science, art or profession. Functions of Management.

SECTION-B
Management & Administration – Principles of management – Social responsibility of management and Ethics

SECTION-C
Human Resource Management: Acquisition of Human Resource – Human Resource Planning and Job Analysis: An Overview; Recruitment – Concept and Sources

SECTION-D
Selection – Concept and Process; Placement, Induction. Training and Development: Concept and Importance.

REFERENCE:
Instructions for the Paper Setters:
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION A
Introduction, Medical Care, Health Status, Economic units and Economic Flows, Measures of Individual health and population health measures.

SECTION B
Demand for Medical Care: A Simple Model- The concept of demand, changes in demand, Elasticity of demand – measuring quantitative responsiveness to price changes.

SECTION C
Health Care Production and Cost- The Input-output relationship, Short run & Long run cost – output relationship, Empirical estimation of cost curves; Hospital Marginal Cost, Hospital Economies of Scale, Nursing Home costs and Health insurance costs.

SECTION D

REFERENCES:
BACHELOR OF VOCATION (B.VOC.) (HEALTH CARE MANAGEMENT)
SEMESTER – III

Paper –III: BASICS OF FINANCE IN HEALTH CARE (THEORY)

Time: 3 Hours  Max. Marks: 50

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION-A

SECTION-B

SECTION-C
Management and Accounting-nature and scope, cost-volume-profit (CVP) Analysis, cash flow analysis, fund flow analysis, ratio analysis, budgeting and budgetary control

SECTION-D
Concepts of business plan and project plan. Productivity, resource mobilization. Hospital rate setting-managerial cost and break-even analysis.

REFERENCES
Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION-A
Introduction- History and origin of science of psychology, definitions and scope of psychology, relevance to healthcare managers, methods of psychology.
Biology of behavior-body mind relationship modulation process in health and illness, genetics and behavior: heredity and environment

SECTION-B
Cognitive process-Attention: types, determinants duration and degree, alterations.
Perception: meaning principles, factors affecting errors.
Learning: nature, type’s nature facture influencing development theories and methods of memorizing and forgetting.
Memory: meaning, types, nature, factors influencing, development theories and methods of memorizing and forgetting.
Thinking: types & levels, stages Intelligence: meaning classification, uses, theories .Aptitude: concept, types, individual differences and variability.
Psychometric assessment of cognitive processes.

SECTION-C
Motivation: Meaning, concepts, types, theories, motives and behavior, conflict resolution.
Emotions and stress: definition components, changes in emotions, theories, emotional adjustments, emotions in health and illness.
SECTION-D


References
1. Organization Behavior – S. P. Robbins
3. Organizational Behavior – M. L. Prasad – S. Chand
BACHELOR OF VOCATION (B.VOC.) (HEALTH CARE MANAGEMENT)
SEMESTER – III

Paper –V: EMERGING TRENDS IN HEALTH CARE (THEORY)

Time: 3 Hours                Max. Marks: 50

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION-A
AMBIENT WELLNESS & VIRTUAL ACTUALIZATION: Virtual realities, real (physical, cognitive, emotional) improvements
Assessment of one’s personal health. Introduction to population health and national and global health goals. Find out the Health boosting features – embedded into the environment. Assessing health information. Improving personal fitness

SECTION-B
Healthy Food Choices .Weight and Body Composition
Dietary choices for lifelong health. Achieving and maintaining a healthy weight

SECTION-C

SECTION-D
Incredible Technological Advancements
Smart technology in hospitals. Biosimilars
New, innovative and seamless ways to access health services. Revolution in care. Effects of Globalization in Health care. Functioning of modern hospitals & changing need of patients. Care offered in Specialty and Super specialty Hospitals.

REFERENCES:
Paper –VI: MEDICAL SOFTWARE APPLICATION-2 (PRACTICAL)

Time: 3 Hours Max. Marks: 50

Practical Examination will be conducted for this paper.

SECTION-A
Review of HIS & CPRS-Introduction, preparation, setup instructions, troubleshooting.
Front office module in HIS- Process of registration, admitting, billing, discharging of patients, financial management, OP &IP modules.

SECTION-B
Financial management module-components, planning and budgeting, project design and implementation.
Introduction to tally.

SECTION-C
Management information system- components, types, steps and key role. OT management system-necessity and principles.
Lab management and reporting system

SECTION-D
Exemplification/ Description of information systems in the areas of Clinical informatics, Consumer health informatics and Public health informatics.
Concept of Management Information System (MIS), Health Information System and its components, Identifying information needs and developing indicators, Designing HMIS, data transmission processing and quality, Ways to enhance use of information in decision making, Uses of HMIS:, Computerization of HMIS, concept of GIS (Geographic Information system) in hospitals. Concept of electronic medical records, & information security

REFERENCES
BACHELOR OF VOCATION (B.VOC.) (HEALTH CARE MANAGEMENT)  
SEMESTER – IV

Paper –I: FUNDAMENTALS OF ACCOUNTING (THEORY)

Time: 3 Hours                                      Max. Marks: 50

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION A

SECTION B
Recording of Transactions: Accounting Process/Cycle, Journal-Recording of transactions Ledger with practical

SECTION C
Subsidiary Books-Types and practical application
Cash Book-Types and recording process

SECTION D
Trial Balance-Methods and errors to be rectified and not rectified

REFERENCES:

Note: The latest editions of the books should be followed.
Time: 3 Hours  Max. Marks: 50

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION A
Decisions of Medical firms under different objectives; Marginal analysis and its uses in the business decision making; Theories of demand: indifference and revealed preference approach; income and distribution effects; demand functions and demand forecasting.

SECTION B
Managerial Applications: The Production Function; Returns to Scale; Productivity Measurements; Constrained Optimization Approach to Developing Optimal Input Combination Relationships; Managerial Applications.

SECTION C
Managerial and Behavioural Theories of Firm: Sales maximization, growth maximization and satisfying theory of a firm. Theory of Firm: Profit maximization under different market structures; Pricing Strategies of firms; Cost plus Pricing; Simple Monopoly, Price discrimination, Monopolistic Competition- non-price competition

SECTION D

REFERENCES:
Instructions for the Paper Setters:
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION A
Aspects of Quality
Quality mission, policy and objectives; concepts, evolution and determinants of quality; Interpretation and process of quality audits; cost of quality and economics of quality. Concepts of quality improvement, quality assurance, business score card.

SECTION B
Quality Management Concepts
Definition, underlying concepts, implementation and measurement of Quality Management, internal customer-supplier relationship, Quality Circles, Quality improvement teams, team work and motivation in Quality management implementation, training and education, role of communication in implementing quality management, policy deployment.

SECTION C
Quality Management Processes
Processes in service organization and their control, simple seven tools of quality control; check sheet, Histogram, Scatter diagram, Process Mapping, Cause and Effect diagram, Pareto analysis, control charts and Advanced tools of quality

SECTION D
Approaches to Quality Management
Facets of quality, quality planning, quality improvement methods, Kaizen, quality audits, diemal audit, accreditation, nursing care standards, Six Sigma, JIT and NABL

References:
Paper –IV: ETHICAL ISSUES IN HEALTH CARE (THEORY)

Time: 3 Hours                                             Max. Marks: 50

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION –A
Law and establishment of hospitals-private/public hospitals, legal requirements under medical council Acts. Punjab clinical establishment act and rules (as amended till date).Basics concepts of labor laws in India. Hospitals as an industry”- application of labor enactments-discipline in hospitals”-disciplinary action-a study of valid requirements of domestic enquiry-Trade union act

SECTION-B
Essentials of contract Act Contractual obligations in hospital services-requisites of a valid contract –hospital as “bailer”-sale and purchase of goods-duties towards patients-code of ethics-violation legal consequences.

SECTION-C

SECTION –D
Legal liability of hospitals-criminal, civil and tortuous, liability for negligence, consumer protection law, absolute liability and vicarious liability, legal remedies available to patients: remedies under contract law, tort, criminal law and consumer protection act. Medical jurisprudence. Medical ethics-basic issues, importance, process of developing and implementing ethics and values in institution-codes of conduct: Hippocrates oath and declaration of Geneva-MCI regulation-professional conduct, etiquette and ethics.

REFERENCES:
4. Kohn LT, Corrigan JM, Donaldson MS, Editors to Err is Human: Building a Better Health System.Institute of Medicine, Committee on Quality of Health Care in America; 1999.
Paper –V: NURSING ADMINISTRATION-I (THEORY)

Time: 3 Hours

Max. Marks: 50

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION-A
Principles and functions of management- Introduction to Management in Nursing .History, Definition, concepts and theories.
Functions of management. Principles of management. Role of nurse as a manager and her qualities.

SECTION-B
Staffing: Philosophy, staffing study, norms, activities, patient classification system, scheduling, human resource management, recruiting, selecting, deployment, retaining, promoting,
Budgeting: Concept, principles, types, cost benefit analysis audit.
Material management: equipment and supplies. Directing process (Leading).
Controlling: Quality management.
Program Evaluation Review Technique (PERT).

SECTION-C
Development of new management practices: Marketing of Hospitals, Specialty Hospitals

SECTION-D
Management of nursing services in the hospital: Planning & Hospital & patient care units including ward management & Emergency and disaster management Human resource management & Recruiting, selecting, deployment, retaining, promoting, superannuation & Categories of nursing personnel including job description of all levels & Patients/ population classification system & Patients/ population assignment and nursing care responsibilities & Staff development and welfare programmes .
Budgeting: Proposal, projecting requirements for staff, equipments and supplies for & Hospital and patient care units & Emergency and disaster management. Material management: Procurement, inventory control, auditing and maintenance in & Hospital and patient care units & Emergency and disaster management.
REFERENCES

Practical Examination will be conducted for this paper.

**SECTION-A**
Practical training in EDP/IT Department, reception, admission, billing & discharge, OPD services, public relation office, pharmacy services, stores and housekeeping.

**SECTION-B**
Training in laboratory services, imaging services, personnel/HR Dept, kitchen and dietary services, marketing, computerized medical record, security services and wards.

**SECTION-C**
Role of health / hospital administrator in central sterile supply dept, library in hospital, emergency, critical care unit, maintain medical record, work in operation theatre and maintenance dept. Management of health care team- Types of committees governing health team. Management of Para-medical personnel, Nurses, field workers, other Para-medical staff.

**SECTION –D**
Practical training in biomedical dept, diagnostic imaging, dental service, dialysis unit, burn units, blood bank, telemedicine and medical transcription.
Teaching Methodologies
The Core Module Syllabus for Environmental Studies includes classroom teaching and field work. The syllabus is divided into 8 Units [Unit-1 to Unit-VII] covering 45 lectures + 5 hours for field work [Unit-VIII]. The first 7 Units will cover 45 lectures which are classroom based to enhance knowledge skills and attitude to environment. Unit-VIII comprises of 5 hours field work to be submitted by each candidate to the Teacher in-charge for evaluation latest by 15 December, 2019.

Exam Pattern:
End Semester Examination- 75 Marks
Project Report/Field Study- 25 Marks [based on submitted report]
Total Marks- 100

The structure of the question paper being:

Part-A, Short answer pattern with inbuilt choice – 25 Marks
Attempt any five questions out of seven distributed equally from Unit-1 to Unit-VII.
Each question carries 5 marks. Answer to each question should not exceed 2 pages.

Part-B, Essay type with inbuilt choice – 50 Marks
Attempt any five questions out of eight distributed equally from Unit-1 to Unit-VII. Each question carries 10 marks. Answer to each question should not exceed 5 pages.

Project Report / Internal Assessment:

Part-C, Field work – 25 marks [Field work equal to 5 lecture hours]
The candidate will submit a handwritten field work report showing photographs, sketches, observations, perspective of any topic related to Environment or Ecosystem. The exhaustive list for project report/area of study are given just for reference:

1. Visit to a local area to document environmental assets: River / Forest/ Grassland / Hill / Mountain / Water body / Pond / Lake / Solid Waste Disposal / Water Treatment Plant / Wastewater Treatment Facility etc.
2. Visit to a local polluted site – Urban / Rural / Industrial / Agricultural
3. Study of common plants, insects, birds
4. Study of tree in your areas with their botanical names and soil types
5. Study of birds and their nesting habits
6. Study of local pond in terms of wastewater inflow and water quality
7. Study of industrial units in your area. Name of industry, type of industry, Size (Large, Medium or small scale)
8. Study of common disease in the village and basic data from community health centre
9. Adopt any five young plants and photograph its growth
10. Analyze the Total dissolved solids of ground water samples in your area.
11. Study of Particulate Matter (PM2.5 or PM10) data from Sameer website. Download from Play store.
12. Perspective on any field on Environmental Studies with secondary data taken from Central Pollution Control Board, State Pollution Control Board, State Science & Technology Council etc.
BACHELOR OF VOCATION (B.VOC.) (HEALTH CARE MANAGEMENT)
SEMESTER – IV

Unit-I
The multidisciplinary nature of environmental studies
Definition, scope and importance, Need for public awareness
(2 lectures)

Unit-II
Natural Resources: Renewable and non-renewable resources:
Natural resources and associated problems.
(a) Forest resources: Use and 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, changes caused by agriculture and overgrazing, effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity, case studies.
(e) Energy resources: Growing energy needs, renewable and non-renewable energy sources, use of alternate energy sources, case studies.
(f) Land resources: Land as a resource, land degradation, man induced landslides, soil erosion and desertification.
   • Role of an individual in conservation of natural resources.
   • Equitable use of resources for sustainable lifestyles.
(8 Lectures)

Unit-III
Ecosystems
• 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 ecosystem: Forest ecosystem, Grassland ecosystem, Desert ecosystem, Aquatic ecosystems (ponds, streams, lakes, rivers, ocean estuaries)
(6 Lectures)

Unit-IV
Biodiversity and its conservation
• Introduction – Definition: genetic, species and ecosystem diversity
• Biogeographical classification of India
• Value of biodiversity: consumptive use, productive use, social, ethical aesthetic and option values
• Biodiversity at global, national and local levels
• India as a mega-diversity nation
• Hot-spots of biodiversity
• Threats to biodiversity: habitat loss, poaching of wildlife, man wildlife conflicts
• Endangered and endemic species of India
• Conservation of biodiversity: In-situ and Ex-situ conservation of biodiversity

(8 Lectures)

Unit-V

Environmental Pollution:
Definition:
• Causes, effects and control measures of Air pollution, Water pollution, Soil pollution, Marine pollution, Noise pollution, Thermal pollution, Nuclear pollution
• 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

(8 Lectures)

Unit-VI

Social Issues and the Environment
• From unsustainable to sustainable development
• Urban problems and 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 warming, acid rain, ozone layer depletion, nuclear accidents and holocaust. Case studies.
• Wasteland reclamation
• Consumerism and waste products
• Environmental Protection Act, 1986
• Air (Prevention and Control of Pollution) Act, 1981
• Water (Prevention and control of Pollution) Act, 1974
• Wildlife Protection Act
• Forest Conservation Act
• Issues involved in enforcement of environmental legislation
• Public awareness

(7 Lectures)

Unit-VII

Human Population and the Environment
• Population growth, variation among nations
• Population explosion – Family Welfare Programmes
• 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

(6 Lectures)

Unit-VIII
Field Work

• 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

(Field work equal to 5 lecture hours)

References:
2. Down to Earth, Centre for Science and Environment, New Delhi.
9. State of India’s Environment 2018 by Centre for Sciences and Environment, New Delhi