MAHATMA GANDHI UNIVERSITY
of
MEDICAL SCIENCES & TECHNOLOGY
JAIPUR

Syllabus

B. Sc. Clinical Nutrition & Dietetics

(6 SEMESTERS U.G. DEGREE PROGRAM)

2023-24

Recommended by Committee of Courses Allied Health Sciences at its meeting held on …..... and approved by faculty and Academic Council at its meeting held on 28/4/2023

NOTICE

1. The university reserves the right to make changes in the syllabus /books/ guidelines, fee-structure or any other information at any time without prior notice the decision of the university shall be binding on all.

2. The jurisdiction of all court cases shall be Jaipur Bench of Hon'ble Rajasthan High Court only.

RULES & REGULATIONS OF
B. Sc. Clinical Nutrition & Dietetics

PROGRAM CODE: - **BSC0723**

(6 SEMESTERS U.G. DEGREE PROGRAM)

1. Introduction:

Objectives/aims of the course:

The course is designed to acquire knowledge in students to recognize "Health for all" as a national goal & right of all citizens and by undergoing training, student will be able to fulfill his/ her social obligations towards realization of this goal, to learn various aspects of National policies on health & devote him/ her to its practical implementation, to develop scientific approach, acquire educational experience for proficiency in profession and promote healthy living, student will be able to learn different aspects of Nutrition applicable to daily living & how we can provide quality of life by preventing & curing diseases, he/ she will be familiar with basic essential for implementation of National Health, programmes including practical aspects of family welfare, maternal & child health, health & nutrition education, able to identify community nutrition problems & learn to work to resolve these by designing & instituting corrective steps and evaluating outcome of such measures, he/ she will be able to idetify clinical needs of patients & design diet regime for them

Programme Outcome:

1. He / she will develop a sense of nutritional well being for under nourished & overnourished population
2. Students can relate themselves with medical profession by taking care of nutritional needs of patients
3. Students will develop skills to assess nutritional status of patients & community
4. Will develop promotive, preventive, curative & rehabilitative aspects of common nutritional & therapeutic problems
5. He/ she will develop skills of diet & behavioral counseling of patients & community
6. Students will acquire skills of communication, cooking, nutrient calculation, nutrition & health education, development of IEC material for community nutrition etc.
7. They will develop skills to identify signs & symptoms of nutrition related problems

2. TITLE OF THE PROGRAM :

B. Sc. Clinical Nutrition & Dietetics

3. DURATION OF THE COURSE:

Duration of the course: 3 Years (6 Semesters)

4. MEDIUM OF INSTRUCTION:

English shall be the medium of instruction for all the subjects of study and for examination of the course.

5. ELIGIBILITY FOR ADMISSION:

10+2 with PCB, 45% marks in the aggregate for Gen. Category and 40% marks for reserve category candidates or as per Govt. Guidelines.

Candidate should have completed the age of 17 years till 31 Dec. of the respective admission year.

6. PROCESS OF ADMISSION:

Admission to B. Sc. Clinical Nutrition & Dietetics Program shall be made on the basis of written entrance examination conducted for the purpose.

7. RESERVATION POLICY:

Reservation in admissions shall be applicable as per policy of the State Government.

8. ENROLLMENT:

Every candidate who is admitted to B.Sc. Clinical Nutrition & Dietetics Degree Program in Mahatma Gandhi Institute of Allied Health Sciences shall be required to get himself/herself enrolled with the Mahatma Gandhi University of Medical Sciences & Technology (MGUMST) after paying the prescribed eligibility and enrolment fees.

A candidate shall deposit enrolment fees along with tuition fees at the time of his/her admission to the course. Such a candidate who fails to submit, to the college Principal, duly filled enrolment form along with original documents including migration certificate required for enrolment within prescribed period then after he/she shall pay late fee applicable at that time. No student will be allowed to appear in the end of semester examination without his/her enrollment .

9. ATTENDANCE:

Minimum 75 % attendance is required in each year, both for theory and practical classes separately, student with deficient attendance will not be permitted to appear in end of semester examination.

10. WORKING DAYS:

Each semester shall consist of not less than 120 working days including examination.

11. CONDUCTION OF THE END OF SEMESTER EXAMINATION:

End of semester examination shall be conducted twice in a year with an interval of six months. Even Semester examination shall be conducted after 6 months of odd semester examination

12. ELIGIBILITY TO APPEAR FOR END OF SEMESTER EXAMINATION

Student is required to have minimum 75% attendance (in theory and practical separately) /to make him/her eligible to Candidates failing in one or more, subject in a semester will be required to appear in their failing subject in the next examination of the same semester next year.

A candidate will have to clear all the subjects of First to Fifth semester before appearing at the sixth semester examination.

13. APPOINTMENT OF EXAMINER & PAPER SETTER

- All the examiners - Paper setters, Theory examination answer books evaluators, External and internal Examiners for Practical examinations shall be appointed by the president of the University from the panel submitted by HOD/Convener of the respective COC through concerned dean of faculty.
- Paper setters shall be external.
- Practical examiner can be appointed to evaluate answers sheets.
- Professor/ Assoc. Professor /Assistant Professor/Lecturer/Allied Health Professional having PG qualification and 5 years' teaching experience after PG in respective field is eligible to act as Internal/External examiner of theory/practical examination.

14. SCHEME OF EXAMINATION

The End of Semester Examination (EOSE) for the Course shall be conducted semester wise at the end of every semester.

i. Theory

(a) There shall be five Theory papers in each semester of the study.

(b) Each Theory paper examination shall be of 3 hours duration and of maximum 70 marks.

(c) Internal assessment (Continuous Assessment or CA) shall be of 30 marks for each Theory Paper.

(d) The Paper Setter shall set the questions within the prescribed course of study of the concerned paper. There will be a set pattern of question papers duly approved by Academic Council.

Pattern of question papers (Annexure 1)

(g) Passing Marks: A candidate will have to obtain at least 50% marks including continuous assessment in each theory paper to pass.

II. Practical and Viva-Voce Examination

(a) At the end of each semester there shall be practical and viva-voce examination of 200 marks. It shall be conducted after the Theory examination is over. A candidate will have to obtain at least 50% marks in practical and viva-voce examination

(b) Practical and viva-voce examination shall be of 140 marks (Practical 100 marks + viva voce 40 marks) and continuous assessment of sixty marks.

(c) The pattern of practical examination shall be as follows –

Semester	Practical Marks			Total Marks	Min. Pass Marks	Practical Examiners
	EOSE (End of Semester Examination)					
	Practical	viva-voce	CA			
I to VI Each	100	40	60	200	100	One Internal & one External Examiner

III **Result**

1. Candidate have to obtain at least 50% marks separately in each Theory paper including continuous assessment and a minimum of 50% marks in the practical examination including viva-voce for him to be declared pass.
2. A Candidate who has failed in a Paper (s) will reappear in respective paper(s) in next examination of the same semester next year.
3. Candidate who has failed in Practical examination will reappear in practical examination only in next practical examination of the same semester.

IV. Supplementary Examination

(1) There shall be a supplementary examination of VI semester only within two months of the declaration of the result of the main examination of VI Semester.

(2) Continuous assessment marks obtained in the concerned failed paper(s)/practical shall be

carried forward for working out the result of next Theory paper(s) and/or practical examination.
(3) If a failing candidate, wants to improve his/her Continuous assessment marks shall be allow to do so. In case he does appear for improvement or gets lesser marks in continuous assessment, his earlier marks will be considered for working out the result of the failing subject.

V. Promotion to the Next Semester

1. A candidate who has passed or failed in one or more subjects shall be promoted to respective next semester.
2. A candidate will be allowed to appear for the VI semester examination only when the backlog of all papers (theory papers and practical) of I semester to V semester exams including elective papers (if any) is cleared.
3. The student is required to clear all the End of Semester Examination within 6 years from the year of joining of the Program otherwise he/she will have to leave the course.

B. Sc. Clinical Nutrition & Dietetics Marks Distribution of Semester – I Examination

Course/Paper Name	Course/Paper Code	Credits	Theory/ Practical/Viva			Pass Marks
CORE COURSES			**EOSE**	**CA**	**Total**	50 % aggregate including continuous assessment marks separately in theory and practical.
Anatomy & Physiology - I	BSC0723S101T	5	70	30	100	
Anatomy & Physiology - II	BSC0723S102T	5	70	30	100	
Basics of Nutrition	BSC0723S103T	5	70	30	100	
ELECTIVE COURSES (ANY TWO)						
Food Preservation	BSC0723S104T	4	70	30	100	
Communicative English	BSC0723S105T	4	70	30	100	
Basics of computer	BSC0723S106T	4	70	30	100	
PRACTICAL/ABILITY ENHANCEMENT COURSE						

Practical & Viva	BSC0723S107P	7	140	60	200	
TOTAL	**06 (05 Theory Paper 01 Practical)**	**30**	**490**	**210**	**700**	

B. Sc. Clinical Nutrition & Dietetics Marks Distribution of Semester – II Examination

Course/Paper Name	**Course/Paper Code**	**Credits**	**Theory/ Practical/Viva**			**Pass Marks**
CORE COURSES			**EOSE**	**CA**	**Total**	50 % aggregate including continuous assessment marks separately in theory and practical.
Basics of Dietetics	BSC0723S201T	5	70	30	100	
Basics of Nutritional Biochemistry	BSC0723S202T	5	70	30	100	
Food Microbiology	BSC0723S203T	5	70	30	100	
ELECTIVE COURSES (ANY TWO)						
Food Adulteration	BSC0723S204T	4	70	30	100	
Principle And History of Naturopathy	BSC0723S205T	4	70	30	100	
Medical Terminology	BSC0723S206T	4	70	30	100	
PRACTICAL/ABILITY ENHANCEMENT COURSE						
Practical & Viva	BSC0723S207P	7	140	60	200	
TOTAL	**06 (05 Theory Paper 01 Practical)**	**30**	**490**	**210**	**700**	

B. Sc. Clinical Nutrition & Dietetics Marks Distribution of Semester – III Examination

Course/Paper Name	Course/Paper Code	Credits	Theory/ Practical/Viva			Pass Marks
CORE COURSES			**EOSE**	**CA**	**Total**	50 % aggregate including continuous assessment marks separately in theory and practical.
Basics of Human Nutritional Requirements	BSC0723S301T	5	70	30	100	
Problems in Human Nutrition	BSC0723S302T	5	70	30	100	
Food Science	BSC0723S303T	5	70	30	100	
ELECTIVE COURSES (ANY TWO)						
Food Toxicology	BSC0723S304T	4	70	30	100	
Organizational Behaviour	BSC0723S305T	4	70	30	100	
Basic Life Support (BLS)	BSC0723S306T	4	70	30	100	
PRACTICAL/ABILITY ENHANCEMENT COURSE						
Practical & Viva	BSC0723S307P	7	140	60	200	
TOTAL	**06 (05 Theory Paper 01 Practical)**	**30**	**490**	**210**	**700**	

B. Sc. Clinical Nutrition & Dietetics Marks Distribution of Semester – IV Examination

Course/Paper Name	Course/Paper Code	Credits	Theory/ Practical/Viva			Pass Marks
CORE COURSES			**EOSE**	**CA**	**Total**	
Food safety	BSC0723S401T	5	70	30	100	

						50 % aggregate including continuous assessment marks separately in theory and practical.
Food Service Management	BSC0723S402T	5	70	30	100	
Nutrition Epidemiology & Anthropology	BSC0723S403T	5	70	30	100	
ELECTIVE COURSES (ANY TWO)						
Basic Principle and History of Yoga	BSC0723S404T	4	70	30	100	
Soft skills	BSC0723S405T	4	70	30	100	
Essentials of demography	BSC0723S406T	4	70	30	100	
PRACTICAL/ABILITY ENHANCEMENT COURSE						
Practical & Viva	BSC0723S407P	7	140	60	200	
TOTAL	**06 (05 Theory Paper 01 Practical)**	**30**	**490**	**210**	**700**	

B. Sc. Clinical Nutrition & Dietetics Marks Distribution of Semester – V Examination

Course/Paper Name	**Course/Paper Code**	**Credits**	**Theory/ Practical/Viva**			**Pass Marks**
CORE COURSES			**EOSE**	**CA**	**Total**	
Family Meal Management	BSC0723S501T	5	70	30	100	50 % aggregate including continuous assessment marks separately in theory and
Therapeutic Nutrition I	BSC0723S502T	5	70	30	100	
Therapeutic	BSC0723S503T	5	70	30	100	

Nutrition II						practical.
ELECTIVE COURSES (ANY TWO)						
Hospital Hazards & Disaster Management	BSC0723S504T	4	70	30	100	
Therapeutic Yoga	BSC0723S505T	4	70	30	100	
Quality in healthcare	BSC0723S506T	4	70	30	100	
PRACTICAL/ABILITY ENHANCEMENT COURSE						
Practical & Viva	BSC0723S507P	7	140	60	200	
TOTAL	**06 (05 Theory Paper 01 Practical)**	**30**	**490**	**210**	**700**	

B. Sc. Clinical Nutrition & Dietetics Marks Distribution of Semester – VI Examination

Course/Paper Name	**Course/Paper Code**	**Credits**	**Theory/ Practical/Viva**			**Pass Marks**
CORE COURSES			**EOSE**	**CA**	**Total**	50 % aggregate including continuous assessment marks separately in theory and practical.
Biostatistics	BSC0723S601T	5	70	30	100	
Advanced Nutrition	BSC0723S602T	5	70	30	100	
Public Nutrition	BSC0723S603T	5	70	30	100	
ELECTIVE COURSES (ANY TWO)						
Hospitals & health system	BSC0723S604T	4	70	30	100	
Project	BSC0723S605T	4	70	30	100	

Management						
Clinical Psychology	BSC0723S606T	4	70	30	100	
PRACTICAL/ABILITY ENHANCEMENT COURSE						
Research Project & Clinical posting	BSC0723S607P	7	140	60	200	
TOTAL	**06 (05 Theory Paper 01 Practical)**	**30**	**490**	**210**	**700**	

RESEARCH PROJECT

It will be a short research project based on case studies/ intervention trials/ cross sectional or longitudinal observational studies/ making nutrition related guidelines/ standardization/ product development etc. for which report will be submitted before commencement of theory exam.

CLINICAL POSTING

Three months rotatory ward posting will be conducted and students will submit ward posting report also before commencement of theory examinations.

Both reports (Project & internship) will be presented in front of 1 External Examiner & 1 Internal examiner at the time of Practical exam.

15. REVALUATION / SCRUTINY:

Revaluation of answer book(s) and security of the marks shall be permissible as per the policy of the university.

16. TEACHING HOURS:

Teaching hours shall be not less than 400 hours in every semester.

17. AWARD OF DEGREE:

The degree shall be awarded by the University only after receipt of Course completion certificate and NO dues from the Principal of the college.

18. LETTER GRADES AND GRADE POINTS

LETTER GRADE	GRADE	PERCENTAGE OF MARKS
O (Outstanding)	10	100 %
A+(Excellent)	9	90-99.99 %

A (Very Good)	8	80-89.99 %
B+(Good)	7	70-79.99 %
B (Above Average)	6	60-69.99 %
C(Average)	5	50-59.99 %
F(Fail)	0	0 Less than 50 %
Ab (Absent)	0	0 Absent

19. Grades Qualifying for Pass:

Theory and Practical Examination

1. Minimum 5 Grade in the end of semester examination and **5 Grade** in continuous assessment evaluated by the department are required to pass **who fails to obtain 5 Grade shall be declared failed.**

2. A student obtaining **Grade F** shall be considered **failed** and will be required to reappear in the examination.

3. Letter Grade **Ab (Absent)** will be showing the absent of the candidate in examination and will be required to reappear in the examination.

Continuous Assessment

Continuous assessments will be conducted two times in a semester. Continuous assessments will consist of departmental examinations, assignments, departmental posting, and evaluations. The objective is to allow students to have hands on experience. It would also help students to develop and formulate the data collection process and data analysis.

End of Semester Examination

a. Each theory paper examination shall be of 3 hours duration.

b. There will be Five theory papers in Each Semester.

20. Credit Weightage Distribution (%)

Item	Credit Weight (%)
1. Continuous Assessment	
Class participation/presentation, study records	10.00%

Assignment, quizzes and summer training report	10.00%
Ward Postings, case studies, project reports	10.00%
2. End of Semester Exam	
70.00%	
Total	**100%**

21. Authority to issue transcript

The Controller of Examination of the University shall be the authority for issuing transcript after receiving the described fee from the candidate.

22. Working Hours/Days

Duration	**3 Years (6 Semesters)**
Working Days	6 Days in A Week
Working Hours	36 Hours in A Week

23. Distribution of Courses Semester-Wise

Semester	**Core Course Component (CCC)**	**Elective Course Component (ECC)**	**Ability Enhance Component (AEC)/Practical**	**Total No. Of Courses/Papers**
Semester I	**3**	**2**	**1**	**6**
Semester II	**3**	**2**	**1**	**6**
Semester III	**3**	**2**	**1**	**6**
Semester IV	**3**	**2**	**1**	**6**
Semester V	**3**	**2**	**1**	**6**
Semester VI	**3**	**2**	**1**	**6**
Total	**18**	**12**	**6**	**36**

24. Distribution of Courses in Each Semester

Sr. No.	Type of Course	Numbers
1	Core Course	3
2	Elective Course	2
Total	5 (Five)	

25. Types of Courses in B. Sc. Clinical Nutrition & Dietetics: -

1. Core Course-course designed under this category aim to cover the basics that a student is expected to imbibe in the discipline of B. Sc. Clinical Nutrition & Dietetics. A course, which should compulsorily be studied by a candidate as a core requirement is termed as a Core course.

2. Elective Course-it is a course which can be chosen from a pool of courses it is specific or specialized or advanced or supportive to the discipline of B. Sc. Clinical Nutrition & Dietetics. Students have to **CHOOSE ANY TWO COURSE IN EACH SEMESTER** from the pool of course given to that semester.

3. **Ability Enhancement Courses (AEC) /Practical:** The Ability Enhancement (AE) Courses or practical are the courses based upon the content that leads to Knowledge enhancement. They are skill-based and are aimed at providing hands-on-training, competencies, skills, etc.

Computation of SGPA and CGPA

The UGC recommends the following procedure to compute the Semester Grade Point Average (SGPA) and Cumulative Grade Point Average (CGPA):

i. The SGPA is the ratio of sum of the product of the number of credits with the grade points scored by a student in all the courses taken by a student and the sum of the number of credits of all the courses undergone by a student, i.e

$$\textbf{SGPA}\ (Si) = \sum(C_i \times G_i) / \sum C_i$$

where C_i is the number of credits of the ith course and G_i is the grade point scored by the student in the ith course.

ii. The CGPA is also calculated in the same manner taking into account all the courses undergone by a student over all the semesters of a program, i.e.

$$\textbf{CGPA} = \sum(Ci \times Si) / \sum Ci$$

where Si is the SGPA of the semester and Ci is the total number of credits in that semester.

iii. The SGPA and CGPA shall be rounded off to 2 decimal points and reported in the

transcripts.

Illustration of Computation of SGPA and CGPA and Format for Transcripts

i. Computation of SGPA and CGPA
Illustration for **SGPA**

Course	**Credit**	**Grade letter**	**Grade point**	**Credit Point** (Credit x Grade
Course 1	3	A	8	3 X 8 = 24
Course 2	4	B+	7	4 X 7 = 28
Course 3	3	B	6	3 X 6 = 18
Course 4	3	O	10	3 X 10 = 30
Course 5	3	C	5	3 X 5 = 15
Course 6	4	B	6	4 X 6 = 24
	20			139

Thus, **SGPA =139/20 =6.95**

Illustration for **CGPA**

Semester 1	**Semester 2**	**Semester 3**	**Semester 4**
Credit : 20 SGPA:6.9	Credit : 22 SGPA:7.8	Credit : 25 SGPA: 5.6	Credit : 26 SGPA:6.0
Semester 5	**Semester 6**		
Credit : 26 SGPA:6.3	Credit : 25 SGPA: 8.0		

Thus, **CGPA =** 20 x 6.9 + 22 x 7.8 + 25 x 5.6 + 26 x 6.0 + 26 x 6.3 + 25 x 8.0

_____= **6.73**

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COURSE CONTENT BSC CLINICAL NUTRITION & DIETETICS

B.Sc. Clinical Nutrition & Dietetics Semester – I Examination

Name of the Program	BSC0723
Name of Course	Anatomy & Physiology - I
Course Code	BSC0723S101T
Type of the Course	Core
Credit per Semester	5
Hours per Semester	70

Course Learning Outcomes: The student will be able to	
CO 1	The student will be able to comprehend medical terminology
CO 2	The student will be able to understand the different segments of the body
CO 3	The student will know body composition
CO 4	The student will be able to understand structure and function of human body cell, blood, muscles and muscular system, bones and skeleton system, organs circulatory system and respiratory system

Course Content

Anatomy & Physiology of

- Cell,
- Blood,
- Muscular system,
- Skeleton system
- Circulatory system,
- Respiratory system

Reference Book: Anatomy & Physiology for Nurses. E.C. Pearce, Jaypee brothers

Name of the Program	BSC0723
Name of Course	Anatomy & Physiology - II
Course Code	BSC0723S102T
Type of the Course	Core
Credit per Semester	5
Hours per Semester	70

Course Learning Outcomes: The student will be able to

CO 1	The student will be able to comprehend medical terminology
CO 2	The student will be able to understand the different segments of the body
CO 3	The student will know body composition
CO 4	The student will be able to understand structure and function of different body organs and organ systems of digestive system, excretory system, sense organs, nervous system, endocrine glands and reproductive system

1. Digestive system,
2. Excretory system,
3. Sense organs,
4. Nervous system
5. Endocrine glands
6. Reproductive system

Reference Book: Anatomy & Physiology for Nurses. E.C. Pearce, Jaypee brothers

Name of the Program	BSC0723
Name of Course	Basics of Nutrition
Course Code	BSC0723S103T
Type of the Course	Core
Credit per Semester	5
Hours per Semester	70

Course Learning Outcomes: The student will be able to	
CO 1	The student will be able to understand basic terminology in the field of nutrition
CO 2	The student will be able to understand various types of macro and micro nutrients
CO 3	The student will know body composition in view of nutrition
CO 4	The student will be able to understand structure, sources and importance of different nutrients

Course Content

1. Basics of Nutrition: Definitions of optimum health, balanced diet, reference man, reference woman
2. Energy – Definition, calculation of requirements by direct and indirect caloriemetry
3. Macronutrients – Carbohydrate, Protein, Fat (Their structure, sources, function)

4. Micronutrients

    a. Minerals – Main and trace elements – Calcium, Phosphorus, Iron, Sulphur, Copper, Selenium, Cobal, Molybdenum, Zinc, Magnesium

    b. Vitamins – Fat soluble vitamins (A, D, E & K) and water soluble vitamins (B Complex vitamins and vitamin C)

5. Water

6. Fibre (Soluble, Insoluble, Digestible, Indigestible, Total)

Reference Book: Text book of Human Nutrition. Bamji MS, Rao R.N. & Reddy V. Oxford & IBH Pub Co. PVT LTD, New Delhi

Name of the Program	BSC0723
Name of Course	Food Preservation
Course Code	BSC0723S104T
Type of the Course	Elective
Credit per Semester	4
Hours per Semester	60

Course Learning Outcomes: The student will be able to	
CO 1	Understand various factors affecting food spoilage
CO 2	Understand various methods used in food preservation
CO 3	Benefits of preserving food

Course Content

1. Concept of preservation
2. Microorganisms involved in food spoilage
3. Benefits of food preservation
4. Food group wise preservation – cereals, pulses, milk products, egg, vegetables, fruits, oil seeds, confectionery
5. Methods of food preservation – Drying, freezing, radiation, canning etc.
6. Different types of preservatives – Natural & synthetic
7. Different types of food items used after preservation

Reference Book: Srilakshmi B. Food Science 43. Charley H. Food Science John Wiley & Sons, 1982

Name of the Program	BSC0723
Name of Course	Communicative English
Course Code	BSC0723S105T
Type of the Course	Elective
Credit per Semester	4
Hours per Semester	60

Course Learning Outcomes: The student will be able to	
CO 1	Will communicate and write in English language effectively
CO 2	Will acquire basic proficiency in LSRW skills
CO 3	Will communicate confidently in formal and informal situations
CO 4	Will develop an ability of critical analysis

Course Content

Unit 1

ii. Identifying Common Errors in Writing with Reference to Articles and Prepositions Basic Writing Skills: Sentence Structures -Use of Phrases and Clauses in Sentences- Analysis of sentences- Transformation and Synthesis of sentences- Assertive to Negative and vice versa, Interrogative to Assertive/Negative and vice versa.

iii. Identifying Common Errors in Writing with Reference to Noun-pronoun Agreement and Subject-verb Agreement.

iv. Conversion of lexical words into meaningful paragraphs

Unit 2

(e) Articulation according to IPA

(f) Stress and Intonation

Unit 3

(c) Nature and Style of Sensible Writing- Defining- Describing Objects, Places and Events – Classifying- Providing Examples or Evidence.

(d) Writing Practices--Writing Introduction and Conclusion - Essay Writing-Précis Writing, Paragraph writing – Types, Structures and Features of a Paragraph - Creating Coherence-Organizing Principles of Paragraphs in Documents- Format of a Formal Letter-Writing Formal Letters eg., Letter of Complaint, Letter of Requisition, Job Application with Resume.

(e) Technical Reports- Introduction – Characteristics of a Report – Categories of Reports Formats- Structure of Reports (Manuscript Format) -Types of Reports - Writing a Report.

Unit 4

2. Communication and its Process
3. Communication in Healthcare
4. Communication and Patient's Safety
5. Barriers and Strategies of Communication

References: High School English Grammar by Wren and Martin

Name of the Program	BSC0723
Name of Course	Basics of computer
Course Code	BSC0723S106T
Type of the Course	Elective
Credit per Semester	4
Hours per Semester	60

Course Learning Outcomes: The student will be able to	
CO 1	Acquire basic computer skills effectively to minimize error during working, patient care and early diagnosis with integrated approach for management of patient
CO 2	To get updated knowledge
CO 3	To learn easy and swift communication skills such as E - communication

Course Content

1. Introduction to computer applications in medical sciences
2. Microsoft office and its applications

3. Use of Microsoft word and its applications
4. Powerpoint presentation
5. Microsoft Access and its application
6. Use of Media and Algorithm for PPT
7. Microsoft Excel, concept and analysis of data
8. Microsoft publishers & Poster/Banner making
9. Use of one note (a personal diary)
10. Application of IT in medical research
11. Internet & its Application

Reference Book: Computer Basics by G. Manju Nath 2010

Name of the Program	BSC0723
Name of Course	Practical & Viva
Course Code	BSC0723S107P
Type of the Course	Practical
Credit per Semester	7
Hours per Semester	70

Course Learning Outcomes: The student will be able to	
CO 1	Understand basics of anatomy & physiology of different body organs
CO 2	Understand basics of nutrition in terms of macro & micro nutrients
CO 3	Understand food sources rich or poor in different nutrients

Course Content

1. Identify the picture of given body part

2. Draw and label different body organs & explain their anatomy & physiology

3. Make a list of low & high food sources of

4. Energy,

5. Protein,

6. Fat,

7. Iron,
8. Calcium,
9. Phosphorus
10. Sodium
11. Potassium
12. Fibre

Reference Books:

1. Nutritive Value of Indian Foods – NIN, ICMR
2. Indian Food Composition Tables, National Institute of Nutritionm ICMR, 2017

B.Sc. Clinical Nutrition & Dietetics Semester – II Examination

Name of the Program	BSC0723
Name of Course	Basics of Dietetics
Course Code	BSC0723S201T
Type of the Course	Core
Credit per Semester	5
Hours per Semester	70

Course Learning Outcomes: The student will be able to	
CO 1	Understand using Indian Food Composition Tables
CO 2	Understand exchange list for different calorie and protein
CO 3	Learn making meal plans for balanced diet for different age groups
CO 4	Learn to do diet counselling for different age groups

Course Content

1. Introduction to dietetics: Balanced diet, optimum nutrition, Definition of health, Recommended dietary allowances, Indian Food Composition Tables 2017, Exchange list, mobile apps
2. Dietary goals & guidelines
3. Balanced diet for different age groups – Adults, infants, children & adolescents, elderly

4. Diet planning for pregnancy and lactation
5. Diet counseling : Points to be taken into account
6. Psychological factors of patient affecting food intake
7. Role of dietitian, qualities of a dietitian

Reference Books:

1. Therapeutic nutrition. B. Srilakshmi
2. Text Book of Nutrition & Dietetics. Khanna et al., 2nd Edition

Name of the Program	BSC0723
Name of Course	Basics of Nutritional Biochemistry
Course Code	BSC0723S202T
Type of the Course	Core
Credit per Semester	5
Hours per Semester	70

Course Learning Outcomes: The student will be able to	
CO 1	Learn basics of biochemistry in titremetry, acid base balance, pH and buffer
CO 2	Learn about macro-nutrients, their structure, types & metabolism
CO 3	Learn about structure of micro-nutrients & their metabolic role

Course Content

1. Introduction to nutritional biochemistry
2. pH, buffer & acid base balance
3. Carbohydrates - Classification, Monosaccharides – Fischer's structure of aldoses and ketoses, ring structure of sugars, anomers and epimers, oxidation of sugars, reduction of sugars, reducing properties of sugars, formation of disaccharides, reducing and non-reducing disaccharides, Polysaccharides – homo and heteropolysaccharides.
4. Lipids - Classification, structures and functions of lipids, Properties of Lipids –Physical and Chemical

5. Protien

ii. Protein structure – Levels of organization – primary, secondary, tertiary and quaternary structure;

iii. Denaturation of proteins.

6. Mineral & Vitamins- their structure & metabolic role.

Reference Books:

1. Textbook of biochemistry by E.S. West, W.R. Todd, H.S. Nelson, T.T. Van Brugger, Oxford I.B.H. Publishing Co., New Delhi, Bombay, Calcutta.

2. Lehninger, A.L. Biochemistry, Worth Publishing Inc. N.Y.

3. Texbook of biochemistry for Medical Students by A.V.S. Rama Rao, L.K. & S. Publishers, Tanaku

Name of the Program	BSC0723
Name of Course	Food Microbiology
Course Code	BSC0723S203T
Type of the Course	Core
Credit per Semester	5
Hours per Semester	70

Course Learning Outcomes: The student will be able to	
CO 1	Learn microbiology of food in terms of their nature & properties
CO 2	Learn about classification & structure of important microorganisms
CO 3	Learn about role of microorganisms in spoilage of different types of food
CO 4	Learn about some useful microorganisms, food hazards & sanitation practices related to it

Course Content

1. Introduction to food microbiology – History, relative humidity, water activity, pH of food

2. Microorganisms important in food – their classification, morphology & physiology
3. Cultivation of microorganisms, sterilization & disinfection
4. Food spoilage – sources of contamination, factors responsible & chemical changes due to spoilage
5. Role of micro organisms in spoilage of different kinds of foods – Cereals, Pulses, Vegetables & fruits, Milk & milk product, Meat & meat products, Fats, oil & sugar, Nuts & oilseeds
6. Common techniques applied to prevent spoilage of foods mentioned in above foods
7. Food hazards- Food borne infections & intoxication, disease outbreak
8. Microorganisms useful - Prebiotics & Probiotics
9. Food sanitation: Microbiology of food plant sanitation, personnel testing, water & milk testing, food testing

Reference Books:

1. Food Microbiology – Frazier
2. Text book of Microbiology – R. Ananthnarayan and C.K. Jayaram Paniker

Name of the Program	BSC0723
Name of Course	Food Adulteration
Course Code	BSC0723S204T
Type of the Course	Elective
Credit per Semester	4
Hours per Semester	70

Course Learning Outcomes: The student will be able to	
CO 1	Learn about adulteration – What is it?
CO 2	Types of adulterants found in commonly consumed foods
CO 3	How to identify adulteration in foods
CO 4	Food laws & standards

Course Content

1. Definition of adulteration & purpose of adulteration
2. Types of adulteration
3. Identification of adulteration
4. Food laws and standards
5. Food borne illness due to adulteration
6. Role of food inspectors

Reference Book

1. Srilakshmi B. Food Science 43. Charley H. Food Science John Wiley & Sons, 1982
2. DART book by FSSAI

Name of the Program	BSC0723
Name of Course	Principle and History of Naturopathy
Course Code	BSC0723S205T
Type of the Course	Elective
Credit per Semester	4
Hours per Semester	70

Course Learning Outcomes: The student will be able to	
CO 1	Learn about basic introduction of naturopathy
CO 2	Origin & history of Naturopathy
CO 3	Importance & practical implications of Naturopathy

Course Content

Unit I: Introduction to Nature Cure or Naturopathy

The Medical Profession & Medical Evolution- an Introduction, Concept of Health & Disease through the ages ,The Human Body ,The evolution of human body ,Philosophy of the body, mind, soul, life, spirit and spiritual body with reference to various cultures, philosophies, Vedas and Modern view ,Composition of the human body, according to Ayurveda, Naturopathy, Yoga, Modern Medicine, Homeopathy.

An Introduction to Nature Cure or Naturopathy- Definitions, concepts & theories of various pioneers in the field , History of Naturopathy & Philosophy of Naturopaths ,Chronological highlights of

Naturopathy ,Philosophy of Indian Naturopaths. Vegiraju Krishnamaraju ,Vinoba Bhave ,Mahatma Gandhi. Dr. S. J. Singh,Dr. J. M. Jussawala,Philosophy of Foreign Naturopaths. Aesculapius, Hippocrates, The School of Salerno, Paracelsus. Vincent Priessnitz , Sebastian Kneipp ,Arnold Rickli ,Louis Kuhne ,Adolf Just ,John H Tilden ,Sigmund Freud ,Henry Lindlahr ,Fundamental principles, concepts & theories of Naturopathy. Laws of Nature according to Henry Lindlahr, Catechism of Nature Cure according to Henry Lindlahr ,Concepts of Health according to Naturopathy ,Concepts of Disease according to Naturopathy

Unit II- Principles & concepts of Naturopathy

The 10 basic principles of Naturopathy :- Principles of Natural Medicine in the West ,The Healing Power of Nature (Vis Medicatrix Naturae) ,Identify and Treat the Causes (Tolle Causam) ,First Do No Harm (Primum Non Nocere) ,Doctor as Teacher (Docere) ,Treat the Whole Person ,Prevention ,Herring‘s law of cure.

Concept of Panchama habhootas & Naturopathy. Foreign matter and toxins accumulation in the body and its importance in elimination through different ways or channels. Unity of disease, Unity of cure and way of treatment. Theory of Toxemia- Toxins and anti-toxins, their generation, mitigation in nature cure way

Concept of Vitality & Vital economy

How Nature Cures- The Natural healing mechanisms :- Arogya Rakshak Panchatantras and their importance in maintenance ofgood health prevention of diseases and treatment of diseases through lifestyle modification. Shareera Dharmas – Ahara, Nidra Bhaya, Maithuna , Natural Immunity & how to acquire natural immunity in diseases. Inflammation- Naturopathic perspective.

Unit - III Diagnostic procedures in Naturopathy & Modern Medicine

Naturopathy: a blend of Drugless Therapies :- Holistic approach of Naturopathy ,Modern perspectives of Naturopathic Medicine ,Understanding Homeostasis ,Metabolism of Xenobiotics ,Aging, Free Radicals and Antioxidants ,Hygiene & importance of physical and mental hygiene in health and disease ,Vaccinations and inoculation – The Naturopathic view. Family planning by Natural therapeutics

Introduction to The Diagnostic procedures in Naturopathy :- Spinal Analysis ,Facial Diagnosis ,Iris Diagnosis ,Chromo Diagnosis ,Natural rejuvenation ,Personal life and prevention of diseases ,Geriatrics and Naturopathy ,Introduction to various systems of Medicine .

Modern Medicine :- Ayurveda ,Introduction ,Definition of Prakriti and its categories. Swastha Vrittam ,Dinacharya ,Ratricharya ,Ritucharya ,Vegadharanam ,Homeopathy, Unani Siddha ,Comparative study of Naturopathy with other systems of Medicine ,Basic essentials of a Naturopathy practitioner - an introduction to qualities of a Naturopathy &Yoga , Practitioner, Approach to the Patient with a Naturopathy view, Ethical considerations, Understanding the Scope & Limitations ,Recent Advances in Naturopathy &Yoga , Introduction to Psychosomatic Diseases & Psychoneuroimmunology ,Introduction to Mind-Body Medicine ,Lifestyle & psychosocial behavior ,Introduction to Integrative Medicine ,An introduction to Research & its importance in Naturopathy

Reference books

1. My Nature Cure or Practical Naturopathy by S.J. Singh

2. The Science of Facial Expression by Louis Kuhne

Name of the Program	BSC0723
Name of Course	Medical Terminology
Course Code	BSC0723S206T
Type of the Course	Elective
Credit per Semester	4
Hours per Semester	70

Course Learning Outcomes: The student will be able to	
CO 1	Learn different types of terms used for various aspects of human body
CO 2	Learn about medicals terms associated to common diseases
CO 3	Administrative and legal medical terminology
CO 4	Medical terms used by different medical practitioners

Course Content

UNIT I

Introduction to medical terminology - Word formation & syntax - Greek alphabet - Greek & Latin prepositional & adverbial prefixes - Singular & plural endings

UNIT II

Human Anatomy and Physiology – Structure & functions of following systems:

a. DigestiveSystem
b. Respiratorysystem
c. Circulatorysystem
d. CentralNervous system

UNIT III

HumanAnatomyand Physiology– Structure &functions of followingsystems:

a. MuscularSkeletalsystem
b. Reproductivesystem
c. Excretorysystem

UNIT IV

Commonly used prefixes in medical terminology - Commonly used suffixes in medical terminology - Commonly used root words in medical terminology.
Common Latin term used in prescription writing - Study of standard abbreviations- Commonly used medical terms to define different parts of the body

UNIT V

Medical terminology used by Cardiologist - Medical terminology used by Neurologist Medical terminology used by Nephrologist - Medical terminology used by Gastroenterologist - Medical terminology used by ENT surgeon - Medical terminology used by Dentist - Medical terminology used by Orthopedic Ian - Medical terminology used by Gynecologist - Medical terminology used by Oncologist - Medical terminology used by Dermatologist - Medical terminology used by Endocrinologist

BOOKS FOR REFERENCE

1. Ross&WilsonAnatomyandPhysiologyinHealthandIllness-TextbookbyAllisonGrant, AnneWaugh, and Kathleen J. W. Wilson.
2. Fundamentals of Anatomy and Physiology-Textbook by Frederic H. Martini

Name of the Program	BSC0723
Name of Course	Practical & Viva
Course Code	BSC0723S207P
Type of the Course	Practical
Credit per Semester	7
Hours per Semester	70
Course Learning Outcomes: The student will be able to	
CO 1	Learn how to make balance diet plans for each age group of life span
CO 2	Students will learn diet counselling
CO 3	Students will learn basics of biochemisry in terms of titration and colorimetry
CO 4	Learn basics of Food microbiology like gram staining, identify fungus, food spoilage

Course Content

1. Calculate nutritive value of a given meal using mobile app & Indian Food Composition Table 2017.
2. Make exchanges, sample menu and write counseling points for balanced diet for adult male
3. Make exchanges, sample menu and write counseling points for balanced diet for adult female
4. Make exchanges, sample menu and write counseling points for balanced diet for a child

5. Make exchanges, sample menu and write counseling points for balanced diet for adolescent
6. Make exchanges, sample menu and write counseling points for balanced diet for elderly person
7. Make exchanges, sample menu and write counseling points for balanced diet for pregnancy
8. Make exchanges, sample menu and write counseling points for balanced diet for lactation
9. Principles of biochemistry – Introduction to working principles of spectrophotometry, chromatography, electrophoresis, titration, colorimeter
10. Volumetric Analysis
11. Acid base titration(Estimation of free alkali present in the given soap solution)
12. Precipitation Titration(Estimate amount of salinity in a given solution using silver nitrate)
13. Complexometric titration(Determination of hardness of water)
14. Qualitative tests for carbohydrates and preparation of derivative (Osazone) Monosaccharides, disaccharides and polysaccharides
15. Principle, use & maintenance of microscope
16. Techniques of preparation & culturing of different types of media
17. Techniques of staining
18. Isolation of bacteria in pure cultures
19. Study of morphological, microscopic characteristics of culture characteristics, biochemical characteristics, - A fermentation reaction, B Starch Hydrolysis, C IMVICtest, D H2S test, E Nitrate reduction F Lipolysis G Coagulase test, H – Cotalove test etc
20. Growth characteristics of bacteria – a. determination of microbial no., plate & slide count of bacteria & molds b. Generation time
21. Morphological culture & some biochemical studies for yeast, molds, important in Food Microbiology for identification in foods, culture for molds & special media preparation for yeasts & molds

22. Microbiological analysis of water, milk & different foods

B.Sc. Clinical Nutrition & Dietetics Semester – III Examination

Name of the Program	BSC0723
Name of Course	Basics of Human Nutritional Requirements
Course Code	BSC0723S301T
Type of the Course	Core
Credit per Semester	5
Hours per Semester	70

Course Learning Outcomes: The student will be able to	
CO 1	Learn basic requirements of energy & protein and their dietary recommendation for different age groups
CO 2	Learn about requirements of fat, carbohydrates & fibre
CO 3	Learn about requirements & dietary recommendations of micro-nutrients

Course Content

1. Energy – Introduction, basal metabolic rate, calculating energy requirements, energy expenditure using bomb calorimeter, indirect calorimeter etc, specific dynamic action of food, deriving nutritional requirements & recommended dietary allowances for energy for different age groups

2. Protein - Deriving nutritional requirements and recommended dietary allowances for entire life span (infancy to old age) for protein & amino acids

3. Fats, carbohydrates and fibre – Recommendations as per RDAs 2020

4. Minerals & Vitamins - Deriving nutritional requirements and recommended dietary allowances for entire life span (infancy to old age) for vitamins & minerals

Name of the Program	BSC0723
Name of Course	Problems in Human Nutrition
Course Code	BSC0723S302T

Type of the Course	Core
Credit per Semester	5
Hours per Semester	70

Course Learning Outcomes: The student will be able to	
CO 1	Learn about assessment of nutritional status by using different techniques of estimation
CO 2	Learn about various major & minor nutritional problems in human
CO 3	Learn to identify different types of problems occuring through micro nutritional deficiencies

Course Content

1. Assessment of Nutritional Status using various techniques -

a. Anthropometric measurements: Definition, measurements, tools/instruments. Techniques for measurements, standards for references, indices, classification, interpretation of data. Use of anthropometry for one time assessment, growth monitoring and emergency situations.

b. Biochemical estimations significant in various nutrient deficiency or excess

c. Clinical examinations significant in various nutrient deficiency or excess

d. Dietary recall methods

2. Major Nutritional problems related to under nutrition - Protein energy malnutrition, kwashiorkor, marasmus, anemia, vitamin A deficiency, Iodine deficiency disorder.

3. Major nutritional problems related to overnutrition – Obesity, diabetes, heart diseases, hypertension, metabolic syndrome

4. Micronutrient deficiencies/ excess - scurvy, beri- beri, pellagra, rickets, osteomalacia, osteoporosis, zinc deficiency & fluorosis - Their prevalence, etiology, biochemical & clinical manifestations, diagnostic techniques, preventive & therapeutic measures

Name of the Program	BSC0723

Name of Course	Food Science
Course Code	BSC0723S303T
Type of the Course	Core
Credit per Semester	5
Hours per Semester	70

Course Learning Outcomes: The student will be able to	
CO 1	Learn about introduction of Food Science
CO 2	Physical and chemical properties of different food groups like cereals, pulses, vegetables, fruits, milk, meat, egg, sugar, fat, nuts & oilseeds
CO 3	Different processing methods of various products made of different food groups
CO 4	Methods of cooking

Course Content

1. Introduction to Food Science
2. Basic food groups - Structure, Physical & Chemical properties of different types of foods groups – a). Cereals & grains, b). Pulses & legumes, c). Vegetables & fruits, d). Nuts & oilseeds, e). Milk & milk products, f). Egg, meat & poultry, g). Sugar & fat
3. Various Food Preparation and pre preparation techniques
4. Various Cooking Methods – Dry Heat & Wet Heat, Microwave cooking, advantage, disadvantage, minimizing cooking losses
5. Different food processing & preservation methods (roasting, frying, boiling, baking, fermentation, germination, grilling, drying, freezing, canning etc)
6. Genetically modified and organic foods

Reference Books:

1. Norman P.N. Food Science The AVI publishing co. 1962
2. Srilakshmi B. Food Science 43. Charley H. Food Science John Wiley & Sons, 1982

Name of the Program	BSC0723
Name of Course	Food Toxicology
Course Code	BSC0723S304T
Type of the Course	Elective
Credit per Semester	4
Hours per Semester	70

Course Learning Outcomes: The student will be able to	
CO 1	Learn about various toxins naturally occuring in food
CO 2	Impact of these toxins on human health
CO 3	Toxicity by packaging materials
CO 4	Toxicity during cooking, serving and storage

Course Content

1. Microbial Contamination, Preservation and Spoilage of different foods

Unit I: Contamination of foods from natural habitat (green plants, fruits, animals, sewage, soil, water, air) and handling and processing. General principles underlying spoilage: causes of spoilage, classification of food based on spoilage, factors affecting kinds and number of microorganisms in food, factors affecting the growth of microorganisms in food. Chemical changes caused by microorganisms.

Unit II: Contamination, preservation of cereals and cereal products, sugar and sugar products: Concept of antibiosis and biological control, secondary metabolites, properties of food spoilage Psychrotropes and Thermophiles.

Unit III: Contamination, preservation and spoilage of meat and meat products, eggs and poultry, fish and other sea foods: preservation by use of heat, low temperature, irradiation, drying and preservatives.

Unit IV: Contamination, preservation and spoilage of milk and milk products, spoilage of heated canned foods: causes of spoilage, appearance of the unopened container types of biological spoilage of canned foods, miscellaneous foods: Fatty foods, essentials oils, Spices and other condiments, salt, nutmeats, other foods Naturally occuring toxins & antinutritional factors present in foods & complications occuring due to them

2. Microbial Toxins and Food Protection

Unit I: Microbial toxins (endotoxin and exotoxin) and toxoids, source and chemistry of microbial toxins in contamination of food grains and food products.

Unit II: General principles of food protection: methods of food protection, asepsis, maintenance of anaerobic conditions, protection by use of high temperature : Thermal death time, heat resistance of microorganisms, determination of thermal death process, protection by use of low temperatures: Growth of microorganisms at low temperatures, effect of subfreezing and freezing temperatures on microorganisms.

Unit III: Protection by drying: methods of drying, factors in the control of drying, microbiology of dried foods, food protection with modified temperature: definition, primary effect of CO2 on microorganism, the safety of Map foods, spoilage of Map and vacuum packaged meats.

Unit IV: Protection by food additives: the ideal antimicrobial protection, food additives, added preservatives, developed preservatives, protection by Radiation: Ultra Violet radiation, ionizing radiations, Gamma rays and Cathode rays, Microwave processing.

3. FMT 203: Food Toxicology and Waste Management

Unit I: Introduction to food toxicology: classification, dose, determination toxins in food, naturally occurring toxins from animals, bacterial and fungal and sea food sources. Food additives as toxicants: artificial colors, preservatives, sweeteners; toxicants formed during food processing such as nitrosomines, maillard reaction products acrylamide, benzene, heterocyclic amines and aromatic hydrocarbons and irradiation, risk of genetically modified food, food supplements, persistent organic pollutants.

Unit II: Agricultural and industrial contaminants in foods: pesticides residues in fruits and vegetables metal contaminants in foods and their toxicity in human body; animal drug residues in food and water, dioxins and related compounds in food; metals such as lead, arsenic and mercury.

Unit III: Introduction: types of waste generated; non-degradable wastes; food industrial wastes from fruit and vegetable processing industry, fish, meat and poultry and dairy industry. Utilization of waste: methods of utilizing wastes to make value added products; pectin, food colorants, antioxidants from fruit peels (citrus, mango, pomegranate), lycopene from tomato peels, enzymes from meat processing.

Unit IV: General principle of biodegradation, biotransformation of industrial waste, Solid waste storage and disposal methods- land-filling, burial, incineration, recycling; standards for disposal of wastewater; physical wastewater treatment i.e. screening, racks, adsorption, sedimentation; chemical wastewater treatment i.e. adsorption, chemical precipitation, flocculation, oxidation process; biological wastewater treatment i.e. anaerobic process (Up flow Anaerobic Sludge Blanket (UASB), Fluidized bed reactor (FBR), hybrid reactors), aerobic lagoons, activated sludge process, trickling filter treatment process

Name of the Program	BSC0723
Name of Course	Organizational Behaviour
Course Code	BSC0723S305T
Type of the Course	Elective
Credit per Semester	4
Hours per Semester	70

Course Learning Outcomes: The student will be able to	
CO 1	Learn about how to behave in a work environment
CO 2	What are his/ her duties & rights in an institution
CO 3	Which values can give him success or failure

Course Content

UNIT I

INTRODUCTION:
Concept of Organizational Behavior (OB): Disciplines that contribute to OB; Opportunities for OB (Globalization, Indian workforce diversity, customer service, innovation and change, networked organizations, work-life balance, people skills, positive work environment, ethies)

UNIT II

INDIVIDUAL BEHAVIOUR:

1. Learning, attitude and Job satisfaction: Concept of learning, conditioning, shaping and reinforcement. Concept of attitude, components, behavior and attitude. Job satisfaction: causation; impact of satisfied employees on workplace.
2. Motivation : Concept; Theories (Hierarchy of needs, X and Y, Two factor,

McClelland, Goal setting, Self-efficacy, Equity theory); Personality and Values : Concept of personality; Myers-Briggs Type Indicator (MBTI); Big Five model. Relevance of values; Indian values; Linking personality and values to the workplace (person-job fit, person organization fit)

3. Perception, Decision Making and Emotions : Perception and Judgements; Factors; Linking perception to individual decision making: Decision making in organizations, Ethics in decision making. Emotional labour; Emotional Intelligence.

UNIT III

GROUP BEHAVIOUR:

2. Groups and Work Teams:Concept: Five Stage model of group development; Group think and shift; Indian perspective on group norms. Group and teams; Types of teams;

3. Leadership: Concept; Trait theories; Behavioral theories (Ohio and Michigan studies); Contingency theories (Fiedler, Hersey and Blanchard, Path-Goal);

UNIT IV

ORGANISATIONAL CULTURE: Concept of culture; Impact (functions and liability); Creating and sustaining culture: Employees and culture: Creating positive and ethical cultures,

UNIT V

ORGANISATIONAL CHANGE, CONFLICT AND POWER: Forces of change; Planned change; Resistance; Approaches (Lewin's model, Organizational development); Concept of conflict; Traditional view and interactionists view of conflict; Conflict process; Functional/ Dysfunctional. Introduction to power and politics.

Name of the Program	BSC0723
Name of Course	Basic Life Support (BLS)
Course Code	BSC0723S306T
Type of the Course	Elective
Credit per Semester	4
Hours per Semester	70

Course Learning Outcomes: The student will be able to	
CO 1	Recognize cardiac arrest
CO 2	Provide effective chest compressions
CO 3	Provide artificial ventilation
CO 4	Use AED

CO 5	Provide first aid for common medical emergencies like trauma
CO 6	To teach communication skills and team dynamics

Course Content

1. Introduction
2. Basic life support for adults
3. Basic life support for infants and children
4. Defibrillator
5. Respiratory arrest
6. Management of choking in adults, infants & children
7. Team dynamics
8. Summary of CPR guidelines

Name of the Program	BSC0723
Name of Course	Practical & Viva
Course Code	BSC0723S307P
Type of the Course	Practical
Credit per Semester	7
Hours per Semester	70

Course Learning Outcomes: The student will be able to	
CO 1	Learn about deriving human nutritional requirements
CO 2	Learn about calculation of basal metabolic rate and overall energy requirements
CO 3	Learn about how to assess nutritional status using anthropometry, biochemical investigations, clinical signs and symptoms, dietary history
CO 4	Learn about physical and chemical properties of different food groups

Course Content

1. Techniques used in nutrition research for deriving recommended dietary allowances for energy - Calculation of BEE & energy requirement of different height, weight, age, sex, temperature situations using different methods – Kleiber's formula, Harris benedict

equation, Broca index, FAO / WHO/ UNU equations & others & a comparative analysis of all

2. Assessment of nutritional status through anthropometry – growth monitoring, BMI, Weight for age, Height for age, BMI for age
3. Assessment of nutritional status through biochemistry – Hemoglobin level
4. Clinical examination
5. Undernutrition - PEM, Anemia, Vitamin A deficiency & Iodine deficiency disorder
6. Overnutrition – hypertension, diabetes, obesity, heart diseases
7. Assessment of nutritional status through dietary recall
8. Plan & prepare recipes for PEM, anemia, vitamin A deficiency
9. Weights and measures; preparing market order and table setting
10. Food preparation, understanding the principles involved, nutritional quality and portion size
11. To prepare recipes as per different food preparation methods like boiling, roasting, frying, sauting, baking
12. Identifying physical & chemical properties of cereals, fats & oils, milk, egg, sugar etc
13. – Colloids, soil, gel, emulsion, foam, dextrinization, caramelization, retrogradation
14. - Identifying quality of grains by different methods
15. To prepare recipes as per different value addition processings like fermentation, malting, germination etc
16. To prepare recipes as per different food preservation methods like canning, pickling, drying, roasting, freezing

B.Sc. Clinical Nutrition & Dietetics Semester – IV Examination

Name of the Program	BSC0723

Name of Course	Food safety
Course Code	BSC0723S401T
Type of the Course	Core
Credit per Semester	5
Hours per Semester	70

Course Learning Outcomes: The student will be able to	
CO 1	Learn about safe food handling practices
CO 2	Learn about FSSAI rules and regulations
CO 3	Learn about safe packaging and storage materials

Course Content

1. Food safety: Basic concept: food safety and importance of safe food, factors affecting food safety: physical hazard, biological hazard, chemical hazards in food. Naturally occurring toxins & antinutritional factors (lathyrism, Epidemic dropsy), contamination of food (Chemical, heavy metal & pesticide residue) fungal aflatoxic hepatitis, enteroergotism & mycotoxicosis.
2. Food Additives: Definition of food additives, classification of food additives. Functional role of different additives: antioxidants, preservatives, food colours, flavouring agents, emulsifying and stabilizing agents, anti-caking agents, sequestrants, buffering agents, anti foaming agents, sweetening agents and others. Safety issues
3. Food safety measures in a food service establishment. Street food safety measures. Hygiene requirements for licensing and safe health status of food handlers, personal hygiene and facilities to employees.
4. Food packaging: Introduction to Packaging : Concepts, Significance and Functions , Classification of Packaging Materials, Packaging Methods, Interactions between Packaging and Food – Toxicity Hazards , Labeling Requirements and Bar Coding, Nutrition Labeling and Nutrition Claims, Coding of Food Product , Packaging Laws and Regulation
5. HACCP-a Food safety assurance system: Introduction, need for HACCP, principles of HACCP, guidelines for application of HACCP principles. HACCP status in India.
6. FSSAI & its rules & regulations to maintain food quality & holistic wellness. Safe food practices as per FSSAI, nutrition labeling & carbon foot prints of food

Name of the Program	BSC0723
Name of Course	Food Service Management
Course Code	BSC0723S402T

Type of the Course	Core
Credit per Semester	5
Hours per Semester	70

Course Learning Outcomes: The student will be able to	
CO 1	Learn management of different types of food service facility
CO 2	Learn about operations performed in a food service industry
CO 3	Learn about resource management in a food service industry

Course Content

1. Food service management – an introduction and history
2. Catering management – Principles, tools and resources
3. Organization of spaces – Kitchen, storage & service areas
4. Equipments – Classification, selection, design, purchasing and maintenance
5. Food management – Types of foods, purchasing, receiving and storage, menu planning, food production, service and dishwashing
6. Financial Management: Definition and scope, cost concept and scope, pricing, book keeping and accounting
7. Personnel management: Development & policies, recruitment and induction, employee facilities and benefits, training and development
8. Hygiene, sanitation and safety: Hygiene, safety, laws governing food service establishments

Name of the Program	BSC0723
Name of Course	Nutrition Epidemiology & Anthropology
Course Code	BSC0723S403T
Type of the Course	Core
Credit per Semester	5
Hours per Semester	70

Course Learning Outcomes: The student will be able to

CO 1	Gain an insight on basics of epidemiology
CO 2	Understand the basics of anthropology

Course Content

UNIT 1

Epidemiology in Nutrition

- Definition and scope of epidemiology , Health and Nutritional epidemiology
- Determinants of MCH & indicators commonly used to track maternal/ child health & nutrition
- Definitions of commonly used epidemiological indicators like Crude death rate, IMR, U5
- MR, Birth rate, Fertility rate, Maternal mortality rate/ratio etc..
- Disease frequency, causes and prevention - population at risk, Incidence and its comparison.
- Epidemiological Methods and Types
- Observational, Experimental, and Potential errors.
- Case fatality, Mortality.

UNIT II

Epidemiology of Major public Health and Nutrition Problems in India

- Status of maternal & child nutrition/health as per latest surveys
- Prevalence and utilization rates of key indicators/interventions for women, children, adolescence: globally and in India
- Studying the progress of key indicators of vulnerable age groups based on disaggregated data rural vs urban, male vs female, SC, ST, OBC and Wealth quintiles. (NNMB, SRS,
- DLHS,CES, MICS,NFHS I, II and III data) and calculating per annum progress/deterioration.
- Vital statistics and Causes of IMR, NMR, MMR, Under 5 Mortality rates & its relationship with nutrition.
- Emergence of evidence based interventions for improving Maternal and Child Health and
- Nutrition from global and National epidemiological data base.

UNIT III:

Epidemiology of Major Micronutrient deficiencies

- Status of micronutrient deficiencies in mothers and children as per latest surveys
- Prevalence and utilization rates of key indicators/interventions to improve micronutrient deficiencies for women, children, adolescence: globally and in India;
- Studying the progress of key indicators of vulnerable age groups based on disaggregated data rural vs urban, male vs female, SC, ST, OBC and Wealth quintiles. (NNMB, SRS, DLHS, CES, MICS, NFHS I, II and III data) and calculating per annum progress/deterioration. Vital statistics and Causes of IMR, NMR, MMR, Under 5 Mortality rates & its relationship with nutrition. Emergence of evidence based interventions for improving Maternal and Child Health and Nutrition from global and National epidemiological data base.

UNIT IV:

Introduction of Anthropology and Its Relevance to Nutrition

- Definition and Application of the Discipline of Anthropology as applied to: Health and Disease
- Nutrition and Nutritional status
- Historical development of Nutritional Anthropology: Evolution from a biomedical to a socio cultural view of nutrition.
- Emic vs Etic Perspective.
- Factors Affecting Food choices and household level practices: Ecological and Geographical
- Poverty, economic status
- Socio cultural; education, ethnic and religious factors.
- Sensory Qualities of Foods and culture
- Girl child and women
- Intra Household Distribution of Food

UNIT V

Cultural Interpretation of Malnutrition and Rural Urban differences

- Community beliefs about cause prevention and treatment of under nutrition and micro nutrient deficiencies (PEM,IDA, VAD, IDD) in children and women in developed and developing countries.
- Ethno-physiology: cultural perceptions of body physiology in different stages of the life cycle (child, adolescent, adult) and its impact on home level nutrition and health care.
- Comparing rural vs urban differences as regards :

Time and activity patterns; workload of men and women and its impact on food intake and nutritional status (especially vulnerable groups)

- Health care seeking behaviors – treatment of illness.
- Complementary feeding and breast feeding practices; family support.
- Seasonal variations in malnutrition and morbidity.

ESSENTIAL READINGS:

Basic Epidemilogy, R Bonita, R Beaglehole, T Kjellström, 2nd Edition , WHO, 2006
http://whqlibdoc.who.int/publications/2006/9241547073_eng.pdf
Moon G, Gould M (2000). Epidemiology: An Introduction. Philadelphia, Open University Press.

Name of the Program	BSC0723
Name of Course	Basic Principle and History of Yoga
Course Code	BSC0723S404T
Type of the Course	Elective
Credit per Semester	4
Hours per Semester	70

Course Learning Outcomes: The student will be able to	
CO 1	Learn about introductory knowledge about yoga

CO 2	Develop an insights of Indian philosophy and Astika & Nastika darshanas
CO 3	Learn about Yoga according to various yogic texts

Course Content

UNIT – I FOUNDATIONS OF YOGA: HISTORY

- Origin of Yoga, History and Development of Yoga; Etymology and Definitions, Misconceptions, Aim and Objectives of Yoga, True Nature and Principles of Yoga
- Introduction to Vedas, Upanishads, Prasthanatrayee and Purushartha Chatushtaya
- General introduction to Shad-darshanas with special emphasis on Samkhya and Yoga Darshana, Yoga in Vedanta

UNIT – II EVOLUTION OF YOGA

Introduction to Epics - (Ramayana, Mahabharata), Yoga in Ramayana, Yoga in Mahabharata

- Introduction to Smritis and Yoga in Smritis; General introduction to Agamas and Tantra, Yoga in Tantra; Concepts of Nadi and Prana in Tantra, Kundalini, Effects of Kundalini Shakti and Shatchakra Sadhana
- Yoga in Medieval Literature, Bhakti Yoga of Medieval Saints, Yoga in Narada Bhakti Sutras.
- Yoga in Modern Times: Yogic Traditions of Ramakrishna and Swami Vivekananda, Shri Aurobindo; Yoga traditions of Maharshi Ramana and Swami Dayanand Saraswati
- Yoga in Contemporary Times: Brief Introduction to important Yoga Paramparas (lineages) Yoga Parampara of Sri T. Krishnamacharya, Yoga Parampara of Swami Shivanada Saraswati, Swami Rama of Himalayas, Maharshi Mahesh Yogi and their contributions for the development and promotion of Yoga.

UNIT – III EVOLUTION SCHOOLS OF YOGA

- Introduction to Schools (Streams)of Yoga: Yoga Schools with Vedanta Tradition (Jnana, Bhakti,Karma and Dhyana), Yoga Schools with Samkhya-Yoga Tradition (Yoga of Patanjali) and Yoga Schools with Tantric Tradition (Hatha Yoga, Swara Yoga and Mantra Yoga)
- Elements of Yoga and Yogic practices in Jainism, Buddhism and Sufism

TEXT BOOKS:

- Lal Basant Kumar: Contemporary Indian Philosophy, Motilal Banarsidas Publishers Pvt. Ltd, Delhi, 2013
- Dasgupta S. N History of Indian Philosophy, Motilal Banarsidas, Delhi, 2012

Name of the Program	BSC0723
Name of Course	Soft skills
Course Code	BSC0723S405T
Type of the Course	Elective
Credit per Semester	4
Hours per Semester	70

Course Learning Outcomes: The student will be able to understand	
CO 1	Learn about accepted behavior at work place
CO 2	Basics of soft skills
CO 3	Benefits of acquiring soft skills in entire life span

Course Content

UNIT I

Introduction to Soft Skills, Aspects of Soft Skills, Effective Communication Skills, Classification of Communication, Personality Development. Positive Thinking, Telephonic Communication Skills, Communicating without Words, Paralanguage

UNIT II

Proxemics, Haptics: The Language of Touch, Meta-communication, Listening Skills, Types of Listening. Negotiation Skills, Culture as Communication, Organizational Communication, Communication Breakdown,

UNIT III

Advanced Writing Skills, Principles of Business Writing, Business Letters, Business Letters: Format and Style, Types of Business Letter, Writing Reports, Types of Report, Strategies for Report Writing, Evaluation and Organization of Data, Structure of Report, Report Style, Group Communication Skills

UNIT IV

Leadership Skills, Group Discussion, Meeting Management, Adaptability & Work Ethics, Advanced Speaking Skills, Oral Presentation, Speeches & Debates, Combating Nervousness, Patterns & Methods of Presentation, Oral Presentation: Planning & Preparation

UNIT V

Making Effective Presentations, Speeches for Various Occasions, Interviews, Planning & Preparing: Effective Résumé, Facing Job Interviews, Emotional Intelligence & Critical Thinking,

Applied Grammar

Books and references

1.Butterfield, Jeff. Soft Skills for Everyone. New Delhi: Cengage Learning. 2010.

2.Chauhan, G.S. and Sangeeta Sharma. Soft Skills. New Delhi: Wiley. 2016.

Name of the Program	BSC0723
Name of Course	Essentials of Demography
Course Code	BSC0723S406T
Type of the Course	Elective
Credit per Semester	4
Hours per Semester	70
Course Learning Outcomes: The student will be able to	
CO 1	Understand the need for the population studies with the help of the census.
CO 2	Do a comprehensive survey of the field of social demography the scientific study of population
CO 3	Understand the core social demographic variables (e.g., fertility, mortality, morbidity, migration), and how these variables influence population growth, composition, and structure
CO 4	Examine in relation to its sociological determinants and consequences and evaluate the relationship between population and issues such as urbanization, family change, population aging and health, economic growth, and the environment

Course Content

UNIT I

Introduction: Definitions, Scope and nature, importance of the study, Historical review, Demography and population Sciences-Comparison

UNIT II

Methods of Demographic Data Collection: Primary and Secondary sources of data collection, Procedures, Uses, Strengths and weakness of census, vital statistics, sample survey, duel reporting system – SRS- Data from national health program/disease surveillance, hospital statistics, police records, remand homes.

UNIT III

Fertility & Mortality: Fertility: Determinants and Measures of fertility trends in India and world, Impact of level of fertility on reproductive health, theories of fertility, conception control –

physical & chemical methods. Mortality: Measures of mortality, Causes of Death: Trends of Mortality in India, differentials in mortality in developed and developing countries. Ratios: fertility rate, infant mortality rate, mortality rate.

UNIT IV

Migration and urbanization: General terms and concepts, internal migration, measures of migration, Differential migration, International migration, Migration in India. Health and environment related challenges in urban society

UNIT V

Population composition, Growth & Problems: Male Female Ratio, Age structure Population pyramids, impact of various demographic processes on the age structure. Comparison – developed and developing countries. Population dynamics and associated problems, Rural-urban distribution of growth pattern.

References:

1. BhendeAsha and Kanitkar Tara, Principles of Population Studies, Himalaya Publishing House, 1996
2. Singh S.N., Premi M.K., Bhatia P.S., Population Transition In India, B.R. Publishing Corporation, Delhi, 1989.

Name of the Program	BSC0723
Name of Course	Practical & Viva
Course Code	BSC0723S407P
Type of the Course	Practical
Credit per Semester	7
Hours per Semester	70

Course Learning Outcomes: The student will be able to	
CO 1	Basic concepts of food safety and their practical implications in a food service industry
CO 2	Management of kitchens in different types of food service industries
CO 3	Understand practical aspect of epidemiology and anthropology

Course Content

1. Food labeling – regulating agency, nutritional facts, Identify food colours, preservatives
2. Study of permitted range of various compounds – emulsifiers, acidity regulators, stabilizers
3. Food service facility visit
4. Market survey for perishable, non perishable & processed food items with prices

5. Planning & preparation of meals for various occasions & Institutions with cost effective resources management
6. Institutional visit to see food administration
7. Table setting & meal presentation methods
8. To make a sample of job description & job specification for any post in a food service industry
9. Organize a canteen in any college event
10. To make model to show work simplification methods
11. Assessing the epidemiology of a nutrition and health problems in vulnerable groups of the population & tracking progress in the last decade
12. Comparing the frequency of occurrence/exposure of nutrition and health
13. Study of Nutrition Anthropology/Research Tools and Methods
14. Brief overview of QL tools (purpose and technique) :
    a. Focus Group Discussion
    b. Open ended Interviews – In depth Interviews & Key Informant Interviews
    c. Various Types of observation methods.
15. Importance of integrating qualitative and quantitative methods (QL and QN);
16. Overview of concept of participatory Research (PR) as distinct from Qualitative Research
    a. Principles of PR
    b. Features of good PR
    c. Introduction of few PR methods (eg. Community mapping, preference ranking, Venn Diagrams, seasonality diagram)
17. Data collection in the area of health and Nutrition using above methods

B.Sc. Clinical Nutrition & Dietetics Semester – V Examination

Name of the Program	BSC0723
Name of Course	Family Meal Management
Course Code	BSC0723S501T
Type of the Course	Core
Credit per Semester	5
Hours per Semester	70

Course Learning Outcomes: The student will be able to understand	
CO 1	Basics of making diet plans – Exchange list, healthy food plate
CO 2	Dietary goals and guidelines for different age groups
CO 3	Planning meals for normal humans at different stages of life

Course Content

1. Planning meals for normal humans at different stages of life

2. Infancy: Growth and development, Nutritional requirements, Advantages of breast feeding, Artificial feeding or bottle feeding, Infant milk substitute act 1992, Preterm baby and nutritional requirements, Feeding problems, Weaning and supplementary foods

3. Childhood & Adolescents: Growth and Development, Growth monitoring, Brain development in preschool age -Effect of nutrition, Nutritional requirements, Dietary guidelines, Infection and nutrition related problems, Eating disorders: Anorexia nervosa, Bulimia nervosa and binge eating disorder

4. Adults & Elderly: Nutritional requirements, Dietary guidelines, Importance of weight management, Nutrition during menopausal stage, Nutrition for elderly, Demography of aging, Process of ageing, Nutritional requirements, Dietary guidelines, Nutrition related problems: osteoporosis and osteoarthritis, chronic diseases and complications, Drug-food and nutrient reaction in elderly

5. Planning meals for pregnancy: Physiological changes, Developmental stages of pregnancy, Nutritional requirements, Dietary guidelines, Pica, Complications of pregnancy and its management

6. Maternal nutrition: Physiology of lactation, Prolactin reflex, Let down reflex, Nutritional requirements, Human milk composition, Lactational amenorrhoea, Effect of breast feeding on maternal health, Galactagogues

Name of the Program	BSC0723
Name of Course	Therapeutic Nutrition I
Course Code	BSC0723S502T
Type of the Course	Core
Credit per Semester	5
Hours per Semester	70

Course Learning Outcomes: The student will be able to	
CO 1	Understand basis to prescribe diet charts for various diseases
CO 2	Understand modification of normal diet into therapeutic diet
CO 3	Understand principles and goals of diet prescription for various diseases
CO 4	Nutritional assessment, diagnosis and intervention for various diseases

Course Content

1. Adaptation of normal diet to progressive diets- liquid/ soft/ full
2. Post surgical progressive diets
3. Special feeding methods
4. Food allergies & intolerance (Etiology, Symptoms, diagnostics & nutritional management)
5. Nutrition, immunity & infection (Etiology, Symptoms, diagnostics & nutritional management – Typhoid, TB and HIV)
6. Weight management: Physiology, BMI, classification, nutritional management
7. Hypertension (Etiology, symptoms, diagnostics & nutritional management)
8. Diabetes (Types, etiology, symptoms, diagnostics & nutritional management)
9. GI tract disorders (Types, etiology, symptoms, diagnostics & nutritional management)

Name of the Program	BSC0723
Name of Course	Therapeutic Nutrition II
Course Code	BSC0723S503T
Type of the Course	Core
Credit per Semester	5
Hours per Semester	70

Course Learning Outcomes: The student will be able to	
CO 1	Understand principles and goals of diet prescription for various diseases
CO 2	Nutritional assessment, diagnosis and intervention for various diseases

Course Content

1. Cardiovascular diseases (Etiology, symptoms, diagnostics & nutritional management)
2. Renal diseases (Etiology, symptoms, diagnostics & nutritional management)
3. Cancer (Etiology, symptoms, diagnostics & nutritional management)

4. Burn (Etiology, symptoms, diagnostics & nutritional management)
5. Neurological diseases (Etiology, symptoms, diagnostics & nutritional management)
6. Critical care nutrition (Etiology, symptoms, diagnostics & nutritional management)

Name of the Program	BSC0723
Name of Course	Hospital Hazards & Disaster Management
Course Code	BSC0723S504T
Type of the Course	Elective
Credit per Semester	4
Hours per Semester	70

Course Learning Outcomes: The student will be able to	
CO 1	Understand different types of hospital hazards
CO 2	Prevention & management of different types of hazards
CO 3	Understand the basic insight of disaster management

Course Content

UNIT I

Hospital hazards – meaning, types (physical, biological, mechanical & psychological), its impact on employees, preventive measures. Hospital hazards management- meaning, need, principles, purpose

UNIT II

Control of hospital acquired infection- types of infection, Common Nosocomial infections and their causative agents, prevention of hospital acquired infection, role of central sterile supply department, infection control committee, monitoring and control or cross infection, staff health, and patient safety.

UNIT III

Biomedical waste management – meaning & categories of biomedical Wastes, disposal of biomedical waste products, incineration and its importance. Government rules and schedules, standards for waste autoclaving, micro waving and deep burial, segregation, packaging, transportation & storage.

UNIT IV

Human waste disposal and sewage disposal- diseases carried from excreta, sanitation barrier,

methods of excreta disposal. Sewage wastes – meaning, composition, aims of sewage disposal, decomposition of organic matter, modern sewage treatment, drawbacks of improper disposal of wastes – solid and liquid – effluent treatment plan.

UNIT V

Medical insurance: national insurance companies, paramount health care services, third party insurance, payment terms and conditions & limitations of liability and indemnity.

UNIT VI

Disaster – meaning, types, manmade, natural, need for disaster Management. Management of natural disasters - flood, earth quake, drought, cyclone, tsunami etc. Epidemics - cholera, plague, typhoid, jaundice & management of epidemics.

UNIT VII

Management of man-made disasters - nuclear, biological & chemical disasters, Accidents - road, train & fire. Management of food poisoning, alcoholic and drug addiction, organization of medical camps.

UNIT VIII

Management of disaster – prevention, method precautions, ambulance management. Role of hospitals, community, voluntary agencies and government in disaster management.

Referred Books:

1. Shahunthand panekarv.-First aid,vora publication
2. Firstaidmanual – accident and emergency,vora medicalpubln.
3. Parkk.-Preventive and social medicine

Name of the Program	BSC0723
Name of Course	Therapeutic Yoga
Course Code	BSC0723S505T
Type of the Course	Elective
Credit per Semester	4
Hours per Semester	70

Course Learning Outcomes: The student will be able to	
CO 1	Demonstrate each technique prescribed for a disease

CO 2	Learn about working principles behind the techniques prescribed for various diseases
CO 3	Precautions to be taken before practicing the special techniques
CO 4	Find another alternative practice if the practice is not found to be effective

Course Content

Therapeutic Yoga – Disease Wise and Evidence based**Yogic Practice**- Management of the disease through suitable yogic practices - Yogic diet, Asanas, Shatkarmas; Pranayama; Meditation; Notional corrections through yogic scriptures and counseling; Yama and Niyama; Stress(emotions management) Life style prescriptions - Moderation in Ahara, Vihara, Achara and Vichara.

- **Integrated approach of Yoga Therapy in the treatment of diseases** Systemic anatomy, physiology of the related System; Patho physiology, Stress and disease; Medical Management; Mechanism of imbalances at psychological, pranic, physical, endocrinal, autonomic levels; psyhocneuro immunological aspect of the disease model; Disease specific parameter; what, why and how of each Yogic practice; Prevention. Evidence research done on the particular disease.

- General Parameters and questionnaires to evaluate Health status - GHQ, Prakriti, Guna, PSS, STAI.

UNIT-II Integrated Approach of Yoga therapy for the following Common Ailments:

- **Respiratory disorders** - Allergic Rhinitis & Sinusitis: COPD: Chronic Bronchitis, Tuberculosis: Evidence research done on the particular disease

- **Cardiovascular disorders:** Hypertension:, Atherosclerosis / Coronary artery disease: Ischemic Heart disease – Angina pectoris / Myocardial Infarction/ Post CABG rehabilitation: Congestive Cardiac failure, Cardiac asthma.
- **Endocrinal and Metabolic Disorder -** Diabetes Mellitus (I&II); Hypo and Hyper-Thyroidism; Obesity: Metabolic Syndrome
- **Obstetrics and Gynecological Disorders, Menstrual disorders:** Dysmenorrhea, Oligomenorrhea, Menorrhagia: Premenstrual Syndrome: Menopause and peri-menopausal syndrome: Yoga for Pregnancy and Childbirth: Complicated pregnancies: PIH, Gestational DM, Ante-natal care, Post-natal care; PCOS

Gastrointestinal disorders APD: Gastritis – Acute & Chronic, Dyspepsia, Peptic Ulcers, Constipation, Diarrhoea, Irritable Bowel Syndrome: Definition, Etiopathogenesis, Inflammatory Bowel Disease, Ulcerative colitis

UNIT-III Cancer: types, clinical features, Side effects of Chemotherapy, radiotherapy

- **Musculo-Skeletal Disorders:** Back Pain: Lumbar Spondylosis, Intervertebral disc prolapse (IVDP), Spondylolisthesis, Spondylitis, Psychogenic- Lumbago, Neck pain: Cervical Spondylosis, radiculopathy, Functional neck pain, All forms of Arthritis: Rheumatoid Arthritis, Osteoarthritis
- **Neurological Disorders: Headaches:** Migraine, Tension headache; Cerebro vascular accidents: Epilepsy; pain; Autonomic dysfunctions; Parkinson's disease
- **Psychiatric disorders:** Psychiatric disorders: Neurosis, Psychosis: Neurosis: Anxiety disorders: Generalized anxiety disorder, Panic Anxiety, Obsessive CompulsiveDisorder, Phobias: Depression: Dysthymia, Major depression, Psychosis: Schizophrenia, Bipolar affective disorder.

Referred Books:

- Dr Shirley Telles & Dr H R Nagendra, A Glimpse into the human body, Swami Vivekananda Yoga Prakashana, Bangalore, 2002
- Ailments series, Swami Vivekananda Yoga Prakashana, Bangalore, 2002

Name of the Program	BSC0723
Name of Course	Quality in healthcare
Course Code	BSC0723S506T
Type of the Course	Elective
Credit per Semester	4
Hours per Semester	70

Course Learning Outcomes: The student will be able to	
CO 1	Learn about various measures to be taken to maintain health care quality
CO 2	Learn about various factor affecting health care quality
CO 3	Desired quality attributes of a healthcare professionals

Course Content

UNIT I

Fundamentals of Quality Management: Introduction, Objectives, Historical Background, Concept of Quality Management, contributions by Quality Management Gurus (Kaoru Ishikawa, Juran's triology, Kaizen, Philip Crosby's principles, Deming, Pareto)

UNIT II

Quality control tools & techniques - Brain storming, Bench marking, Business process

reengineering (BPR), statistical process control, fish bone diagram, six sigma concept, poka yoke, Quality Assurance, Continuous quality improvement (CQI), quality circles.

UNIT III

Techniques of Quality Management - Improving Hospital Performance, Patient Participation, Quality Health Care through Patient Satisfaction, conceptual model for assessing quality in health care.

UNIT IV

Organization wide Quality Improvement in Health Care – Introduction, organizing for Quality Assessment, Quality Improvement fundamentals, A Quality Improvement model of daily Patient Care.

UNIT V

Assessing Quality Health Care - Attributes of Quality in Health Care, Attributes of a Good Patient Practitioners Relationship, Patient Satisfaction Survey, and The measurement of Quality in health care.

UNIT VI

Total quality management - The implementation of Total Quality, Planning Quality, organizing Quality, Evaluating Quality, Transforming organizations to a Total Quality Philosophy and Culture. Outcome Management and Total Quality - Background of Quality outcome, what is quality outcome and what is outcome Management?

UNIT VII

Concepts of Accreditation in Hospitals: NABH, NABL, JCI - ISO 9000 Quality Management, Effects and Benefits of ISO 9000 management System & clauses. Audits for quality assessment & Management-Antibiotic audit, Infection control Review & Tissue Committee review.

Referred Books:

1. Raandi Schmidt J.Trumboand R. Jonson, Quality in Health Care Sector – ASQC Quality Press.
2. Quality Improvement in Health Care, 2nd Ed, Nelson Thrones

Name of the Program	BSC0723
Name of Course	Practical & Viva
Course Code	BSC0723S507P
Type of the Course	Practical
Credit per Semester	7

Hours per Semester	70

Course Learning Outcomes: The student will be able to	
CO 1	Learn to make balance diet prescriptions for different stages of life
CO 2	Learn to use Indian food composition tables & mobile apps.
CO 3	Learn to assess patients nutrtionally and planning meals for various disease conditions

Course Content

1. Using Food exchange list & Indian food composition tables and mobile applications
2. Learn to prepare market order
3. Making diet prescription, counseling & a recipe preparation for infancy and childhood
4. Making diet prescription, counseling & a recipe preparation for adolescent age group
5. Making diet prescription, counseling & a recipe preparation for adult Man & Woman
6. Making diet prescription, counseling & a recipe preparation for geriatric age group
7. Making diet prescription, counseling & a recipe preparation of Pregnant & lactating women
8. Making diet plans for clear liquid, full liquid, soft diet and full diet for given parameters
9. Make a diet plan for RT feed as per given parameters
10. Plan a day's diet and prepare 1 recipe for obesity
11. Plan a day's diet and prepare 1 recipe for diabetes
12. Plan a day's diet and prepare 1 recipe for hypertensive patient
13. Plan a day's diet and prepare 1 recipe for peptic ulcer
14. Plan a day's diet and prepare 1 recipe for lactose intolerace
15. Plan a day's diet and prepare 1 recipe for celiac disease
16. Plan a day's diet and prepare 1 recipe for liver patient
17. Plan a day's diet and prepare 1 recipe for atherosclerosis
18. Plan a day's diet and prepare 1 recipe for chronic kidney disease patient

19. Plan a day's diet and prepare 1 recipe for cancer patient

20. Plan a day's diet and prepare 1 recipe for burn

21. Plan a day's diet and prepare 1 recipe for RTA patient

22. Plan a day's diet for ICU patient as per given parameters

B.Sc. Clinical Nutrition & Dietetics Semester – VI Examination

Name of the Program	BSC0723
Name of Course	Bio Statistics
Course Code	BSC0723S601T
Type of the Course	Core
Credit per Semester	5
Hours per Semester	70

Course Learning Outcomes: The student will be able to learn	
CO 1	Basics of biostatistics
CO 2	Implications of biostatistics in medical research

Course Content

UNIT I

Background and Basic Concepts- Introduction – Statistics defined – Functions – Scope – Limitations.

UNIT II

Diagrammatic and Graphic Representation - Introduction – Significance – Difference between Diagrams and Graphs – Types of Diagrams.

UNIT III

Measures of Central Tendency - Introduction – Types of Averages – Arithmetic Mean (Simple and Weighted) – Median – Mode.

UNIT IV

Measures of Dispersion - Range – Quartile Deviation – The Mean deviation and the Standard deviation – Coefficient of Variation.

UNIT V

Correlation -meaning and types - Regression Analysis – Time series analysis – fitting the trend line through partial least square method.

UNIT VI

Probability and probability, distributions: Laws of probability, Bayes' theorem, Mathematical Expectation, Binomial, Poisson and normal probability distribution.

UNIT VII

Testing of hypothesis: large sample test, small sample test (t, F, Z test and Chi square test)

UNIT VIII

Introduction to hospital statistics- types, uses- reports related to admission, transfer, discharge and death-work load statistics- healthcare evaluation statistics.

UNIT IX

Hospital utilization statistics- admission- admission rate- discharge -hospital bed related statistics

UNIT X

Patient traffic-daily average census-ALOS-BOR-Bed turnover interval- death rate-autopsy rate-caesarian rate.

BOOKS FOR REFERENCE:

1. S.P. Gupta, Statistical Methods.

Name of the Program	BSC0723
Name of Course	Advanced Nutrition
Course Code	BSC0723S602T
Type of the Course	Core
Credit per Semester	5
Hours per Semester	70

Course Learning Outcomes: The student will be able to	
CO 1	Different types of dietary trends in current practice in market
CO 2	Functional foods
CO 3	Basics of Nutraceuticals

CO 4	Basics of sports

Course Content

Unit I Nutrition in special conditions

- Military nutrition
- Space nutrition
- Nutrition in emergency conditions

Unit 2. Emerging concepts in nutrition

- Ongoing nutrition transition and its implications – Different types of diets
- Nutrigenomics
- Nutraceuticals
- Organic foods, functional foods, GM foods
- Ayurvedic, herbal & home remedies

Name of the Program	BSC0723
Name of Course	Public Nutrition
Course Code	BSC0723S603T
Type of the Course	Core
Credit per Semester	5
Hours per Semester	70

Course Learning Outcomes: The student will be able to		
CO 1	9.	Gain a insight on Public Health Aspect
CO 2	10.	Geographical Distribution of Health Problems
CO 3	11.	Ongoing Programs for combating malnutrition

Course Content

UNIT I

- Concept and scope of public nutrition
- Definition and multidisciplinary nature of public nutrition
- Role of public nutritionist
- Health Care Delivery System

UNIT II

Nutritional problems, their implications and related nutrition programmes

· Etiology, prevalence, clinical features and preventive strategies of-

- Undernutrition –
- Protein energy malnutrition, nutritional anemia, vitamin A deficiency, iodine

deficiency disorders
- Overnutrition – obesity, coronary heart disease, diabetes
  - Fluorosis

Unit III

Assessment of nutritional status

· Objectives and importance

· Methods of assessment

a. Direct – clinical signs, nutritional anthropometry, biochemical tests, biophysical tests

b. Indirect – Diet surveys, vital statistics

UNIT IV:

Nutrition Monitoring and Nutrition Surveillance

Objectives and components of Nutrition Monitoring

Nutrition Surveillance System (NSS)

1. Objectives and Uses of Nutrition Surveillance
2. Key Indicators of Nutrition Surveillance System

Nutrition Education

4. Need, Scope and Importance
5. Theories of NE
6. Process of NEC (Nutrition Education Communication)

UNIT V:

1. Cultural Interpretation of Malnutrition and Rural Urban differences
2. Nutrition Policies, Programmes and Acts
3. National Nutrition Policy
4. Nutrition Programmes
5. ICDS
6. Nutrient Deficiency Control Programme
7. Supplementary Feeding Programmes
8. Food Security Programmes
9. Self Employment and Wage Employment Schemes
10. Planning Cycle : Programme Planning and Administration

Name of the Program	BSC0723
Name of Course	Hospitals & Health system
Course Code	BSC0723S604T
Type of the Course	Elective
Credit per Semester	4
Hours per Semester	70

Course Learning Outcomes: The student will be able to	
CO 1	Learn concept of holistic health

CO 2	Understand definition & meaning of hospital
CO 3	Healthcare system of India

Course Content

HOSPITAL & HEALTH SYSTEM (HISTORY & EVOLUTION)

UNIT I

Definition and meaning of Health - Concept of Health, Holistic approach to health, Determinants to health Responsibility for Health, Health & Development, Indicators of Health, Concept of Disease, Concept of Causation, Natural History of Disease, Spectrum of disease, Concepts of Control, Modes of Intervention

UNIT II

Definition and meaning of hospital - historical development of hospitals globally, Systems of medicine, Modern medicine, changing concept of hospitals, present status of hospitals (public & private) in India, Classification of Hospitals

UNIT III

Healthcare – Concepts, changing concepts, levels, healthcare delivery system in India, public, private sector, Indigenous system of medicine, Importance of Voluntary health agencies and health programs in delivering healthcare in India

UNIT IV

Hospital as a system - Peculiarities of hospital system, Roles & Responsibilities of Hospitals, Administration of rural hospitals, staffing pattern & Job description.

UNIT V

The reforms of Healthcare System- the healthcare system in US/UK, Canada, China, Singapore. Canadian lessons in Healthcare reforms & Future of Healthcare System.

UNIT VI

Recent trends in healthcare system: Medical Tourism –Introduction, Ethics, Challenges, Standards and Future. Telemedicine - History, Definition & concepts, Types, Advantages & Disadvantages, Challenges, telemedicine in India.

Referred Books:

1. The Evolution of International Health System, Cumper G.E,OUP NewYork,1991
2. Management of Hospital (4Vols), S.L Goel & R. Kumar, Deep & Deep Publications Pvt. Ltd.

Name of the Program	BSC0723
Name of Course	Project Management
Course Code	BSC0723S605T
Type of the Course	Elective
Credit per Semester	4
Hours per Semester	70

Course Learning Outcomes: The student will be able to	
CO 1	Learn the basic concept of project and its management
CO 2	Learn about project feasibility
CO 3	Learn about project planning
CO 4	Learn about project evaluation

Course Content

UNIT I

Project Management - Introduction, Meaning & Definition of project. Defining - Project Managers, Functional Managers & Executive's role. Project Manager as a planning agent, Project Driven Vs Non Project Driven organization, marketing in the Project Driven Organization, Programs and Projects, Product Vs Project Management, Project Life Cycles, program evaluation, project analysis & management.

UNIT II

Project Planning- Identifying strategic project variables, Project planning, Statement of work, Project specifications, Milestone schedule, Work breakdown structure, Planning cycle, Management Control, categories of project.

UNIT III

Project Feasibility - technical feasibility, marketing feasibility, socio-economic feasibility, managerial feasibility, financial feasibility and potential feasibility.

UNIT IV

Project Evaluation and Review techniques - Estimating activity time, estimating total program time, PERT/CPM planning, Crash time, project sustainability, operations research.

UNIT V

Project Management Functions - Controlling, Directing, Project authority, Team building, Leadership, communications, Project review meetings, Management policies and procedures, proposal writing.

UNIT VI

Pricing Estimating & Cost Control - Types of estimates & Pricing process, Labor distributions, Overhead rates, Material/Support costs, Pricing review, Budgeting for projects variance & earned value, Status reporting, project accounting.

Referred Books:

1. Project Management - Choudary S
2. Project management-Joseph J Moder and Philips C.R.
3. Total Project management - Joy P.K.

Name of the Program	BSC0723
Name of Course	Clinical Psychology
Course Code	BSC0723S606T
Type of the Course	Elective
Credit per Semester	4
Hours per Semester	70

Course Learning Outcomes: The student will be able to	
CO 1	Learn about Psychological aspects of human behaviour
CO 2	Learn about psychological management in various health problems
CO 3	Learn about psychological factors affecting health and disease

Course Content

UNIT I

Introduction: Definition of Psychology; Domains of behaviour; Nature; Goals of Psychology; History of Psychology: Different schools of Psychology; Branches of Psychology; Application of Psychology; Role of a psychologist in society

UNIT II

Sensation and Perception: Sensation, Nature of perception, Attention and Perception,

Perceptual organization.

UNIT III

Learning, Remembering and Thinking: Concept of learning: Definition, Nature of Learning, Verbal learning: Nature, Materials and Experimental methods, Procedures of learning; Conditioning: Classical conditioning and Operant conditioning; Trial and Error, Insightful Learning, Learning Curve; Basic principles of learning, Acquisition delayed conditioning, trace conditioning, Shaping, role of Reinforcement, schedule of reinforcement.

UNIT IV

Remembering and Forgetting: Nature of Remembering: Retention and Forgetting: STM and LTM, Basic nature, Methods of measuring Short Term Memory and Long Term Memory; Retention, Forgetting and factors involved in forgetting, Factors of forgetting- Level of original learning, interpolated activity, testing situation, Experimental procedure of Retroactive Inhibition. Thinking: Nature of Thinking, Problem Solving: Methods and Materials.

UNIT V

Transfer of Learning: Transfer of learning: Nature & Types of transfer, Design of Transfer Experiment.

UNIT VI

Emotion:Definition; Nature; Types; Physiological responses-Arousal and emotional intensity; Theories of Emotion – James Lange Theory, Cannon Bard Theory and Schacter Singer Theory, Richard Lazarus' theory; Communication of Emotion – Emotional expression ,Characteristics, Innate Expression of Emotions, Social Aspects of Emotional Expressions, Biology of emotion.

UNIT VII

Motivation: Definition; Motivation Cycle; Nature of Motivation, Need, Drive and Incentive, Primary and Secondary Motives; Types of motivation-Physiological Motivation – Hunger, Thirst, Psychological motivation – Achievement, Affiliation, Power, Parenting; Theories of Motivation – Need theories ;Drive Reduction Theories; Current status of motivational Psychology

UNIT VIII

I: Personality:Definition; Determinants; Approaches –Dispositional approaches – Type approach – Hippocrates, Sheldon, Kretchmer, Jung's typology, Trait theory Allport, Catell, Eysenck & BIG Five; Psychoanalytic –Freud; Assessment of personality – Objective, Subjective and Projective.

UNIT IX

Intelligence: Nature of Intelligence, Nature vs Nurture, Theories of intelligence; Individual Differences in Intelligence, Intellectual disability and Gifted children; Measurement of

intelligence: Verbal, Non-verbal, Individual and Group Tests.

UNIT X

Language: Definition, stages in the development of language; Theories of language

References:

1. Fernald (2018). Munn'sIntroduction to Psychology (5/Ed.) AITBS Publishers, India
2. Kendler, H. H. Basic psychology (2nd ed.). New York: AppletonCentury-Crofts, 1968.
3. Munn, N., Fernald, L. D., Jr., & Fernald, P. S. lntroduction to psychology (3rd ed.). Boston: Houghton-Mifflin. 1972.

Name of the Program	BSC0723
Name of Course	Research Project & Clinical posting 3 months
Course Code	BSC0723S607P
Type of the Course	Practical
Credit per Semester	7
Hours per Semester	70

Course Learning Outcomes: The student will be able to	
CO 1	Practical aspects of biostats & research methodology
CO 2	Practical aspects of therapeutic nutrition during 3 months ward posting
CO 3	Learn practical aspects of research in a research project

Course Content

1. Research Project

- Pedagogy

Identifying several situations same and able to dissertation work, writing a proposal and making a presentation to the Dissertation faculty advisory committee. Reporting to the committee on the progress of research work periodically. Making use of a variety of research methods. Defending the inference before the Examining Committee.

- Contents

Every student will do a detailed study on the topic selected for the dissertation, and is expected to prepare a two or three proposals which he intends to take up for the Dissertation. Faculty will examine this and decide on the topic of dissertation.

The Process involves:

1. Formulation of objectives and hypothesis
2. Review of literature
3. Designing the tool for data collection .
4. Data collection
5. Coding, classifying and analysis of data
6. Inferences, conclusions and recommendations
7. Preparing a bibliography
8. Writing the dissertation and submission

2. Clinical Posting: Student will be posted in different wards rotationwise and he need to make a report and present 1 case study for the same.

3. Both reports prepared for research project and clinical posting will be evaluated by examiner at the time of practical examination

MODEL PAPER

B.Sc. Clinical Nutrition & Dietetics -I

Code BSC0723S101T

First Semester

B.Sc. Clinical Nutrition & Dietetics

Examination Month Year

Paper - I

Anatomy & Physiology - I

Time: Three Hours

Maximum Marks: 70

Attempt all questions

All the parts of one question should be answered at one place.

Only one supplementary copy along with main answer book is allowed

Q. No. 1. Long Answer (Attempt any 2) **2 x 15 = 30**

A. Classify joints with the help of suitable examples with special emphasis on synovial variety

B. Describe hip joint, explain its type, articular surface and its ligaments.

C. Explain physiology of circulatory system

Q. No. 2 Short Essay (Attempt any 2) 2 x 10 = 20

a) Describe alimentary tract of human body.

b) What is the anatomy of liver

c) Explain about physiology of liver

Q. No. 3 Short Notes (Attempt any 4) 4 x 5 = 20

a) Anatomy of eye.

b) Describe about structure of cell

c) Explain about structure of liver.

d) Abdominal Aorta

e) Make diagram of ear.

MODEL PAPER

B.Sc. Clinical Nutrition & Dietetics -I
Code BSC0723S102T

First Semester

B.Sc. Clinical Nutrition & Dietetics

Examination Month Year

Paper - II

Anatomy & Physiology - II

Time: Three Hours

Maximum Marks: 70

Attempt all questions

All the parts of one question should be answered at one place.
Only one supplementary copy along with main answer book is allowed

Q. No. 1. Long Answer (Attempt any 2) 2 x 15 = 30
A. Describe cardiac cycle and add a short note on cardiac output
B. Describe digestion of protein in human body
C. What is the physiology of respiratory system ?

Q. No. 2 Short Essay (Attempt any 2) 2 x 10 = 20
A. Functions of salivary glands
B. Blood Pressure
C. Explain about physiology of liver

Q. No. 3 Short Notes (Attempt any 4) 4 x 5 = 20
A. Draw a labeled diagram of pancreas
B. What is portal blood flow mechanism?
C. Describe about ear bones with labeled diagram of internal ear.
D. Explain about anatomy of thyroid gland
E. Typical spinal nerve.

MODEL PAPER

B.Sc. Clinical Nutrition & Dietetics -I
Code BSC0723S103T

First Semester
B.Sc. Clinical Nutrition & Dietetics
Examination Month Year
Paper - III
Basics of Nutrition
Time: Three Hours
Maximum Marks: 70
Attempt all questions
All the parts of one question should be answered at one place.
Only one supplementary copy along with main answer book is allowed

Q. No. 1. Long Answer (Attempt any 2) 2 x 15 = 30
A. Explain carbohydrates – its types, functions, food sources
B. Explain fat soluble vitamins, their types, functions, sources, diseases due to deficiency and excess
C. Describe antinutrients.

Q. No. 2 Short Essay (Attempt any 2) 2 x 10 = 20
A. Explain macro and micronutrients.
B. Write functions of protein
C. Explain about scurvy

Q. No. 3 Short Notes (Attempt any 4) 4 x 5 = 20
A. Beri - Beri
B. Pellagra
C. Sources of iron
D. Functions of calcium
E. Describe about selenium

MODEL PAPER

B.Sc. Clinical Nutrition & Dietetics -I
Code BSC0723S104T

First Semester
B.Sc. Clinical Nutrition & Dietetics
Examination Month Year
Paper - IV
FOOD PRESERVATION
Time: Three Hours
Maximum Marks: 70
Attempt all questions
All the parts of one question should be answered at one place.
Only one supplementary copy along with main answer book is allowed

Q. No. 1. Long Answer (Attempt any 2) 2 x 15 = 30
A. What is food preservation? Write its principles
B. Describe about different methods of food preservation
C. What is pasteurization, explain different methods of pasteurization

Q. No. 2 Short Essay (Attempt any 2) 2 x 10 = 20
A. Explain factors responsible for food spoilage
B. Describe methods used to preserve cereal products
C. Write about Indian fermented foods

Q. No. 3 Short Notes (Attempt any 4) 4 x 5 = 20
A. Describe different types of pickles
B. How fruits are preserved. Write principle behind it
C. Irradiation method of food preservation
D. Difference between sun drying and freeze drying
E. Type of spoilage found on pickles

MODEL PAPER

B.Sc. Clinical Nutrition & Dietetics -I
Code BSC0723S105T

First Semester
B.Sc. Clinical Nutrition & Dietetics
Examination Month Year
Paper - V
COMMUNICATIVE ENGLISH
Time: Three Hours
Maximum Marks: 70
Attempt all questions
All the parts of one question should be answered at one place.
Only one supplementary copy along with main answer book is allowed

Q. No. 1. Long Answer (Attempt any 2) 2 x 15 = 30
A. Describe nonn & types of nouns
B.Describe about different types of pronouns with suitable examples
C. Describe about active and passive voice.

Q. No. 2 Short Essay (Attempt any 2) 2 x 10 = 20
A. Describe common errors in writing with reference to Articles and Prepositions
B. Give 10 examples of conversion of Interrogative to Assertive sentence
C. Write an Essay on “Role of media in developinga culture of a Nation”

Q. No. 3 Short Notes (Attempt any 4) 4 x 5 = 20
A. What is a technicle report?
B. Write barriers of communication
C. Describe communication in hospital setting
D. Describe nature of sensible writing.
E. Write a short paragraph using given words – Country....Loyalty.....patriotism...modern era

MODEL PAPER

B.Sc. Clinical Nutrition & Dietetics -I
Code BSC0723S106T

First Semester
B.Sc. Clinical Nutrition & Dietetics
Examination Month Year
Paper - VI
BASICS OF COMPUTER
Time: Three Hours
Maximum Marks: 70
Attempt all questions
All the parts of one question should be answered at one place.
Only one supplementary copy along with main answer book is allowed

Q. No. 1. Long Answer (Attempt any 2) 2 x 15 = 30
A. Discuss about memory.
B. Discuss about input / output devices.
C. What to you understand about magnetic ink character recognition (MICR)?

Q. No. 2 Short Essay (Attempt any 2) 2 x 10 = 20
A. Optical mark recognition (OMR).
B. Bar code reader
C. Computer software

Q. No. 3 Short Notes (Attempt any 4) 4 x 5 = 20
A. Monitor..
B. Word processing software.
C. Definition of Machine language.
D. Compiler & Interpreter
E. Interpreter.

MODEL PAPER

B.Sc. Clinical Nutrition & Dietetics -I
Code BSC0723S201T

Second Semester
B.Sc. Clinical Nutrition & Dietetics
Examination Month Year
Paper - I
BASICS OF DIETETICS
Time: Three Hours
Maximum Marks: 70
Attempt all questions
All the parts of one question should be answered at one place.
Only one supplementary copy along with main answer book is allowed

Q. No. 1. Long Answer (Attempt any 2) 2 x 15 = 30
A. What is nutrition care process? Explain all steps.
B. Different types of tools for assessment of nutritional status.
C. Role & skills of dietitian.

Q. No. 2 Short Essay (Attempt any 2) 2 x 10 = 20
A. Types of documentation done in a hospital care setting.
B. What is SOAP in dietetics practice?
C. Describe Indian food composition tables.

Q. No. 3 Short Notes (Attempt any 4) 4 x 5 = 20
A. Mobile apps used in the field of dietetics.
B. Write full form of ADIME.
C. Describe GLIM criteria.
D. Psychological factors in patients counselling.
E. Balanced diet

MODEL PAPER

B.Sc. Clinical Nutrition & Dietetics -I
Code BSC0723S202T

Second Semester
B.Sc. Clinical Nutrition & Dietetics
Examination Month Year
Paper - II
BASICS OF NUTRITIONAL BIOCHEMISTRY
Time: Three Hours
Maximum Marks: 70
Attempt all questions
All the parts of one question should be answered at one place.
Only one supplementary copy along with main answer book is allowed

Q. No. 1. Long Answer (Attempt any 2) 2 x 15 = 30
A. Explain Glycolysis with diagram.
B. Explain major & minor nutrients in our diet with their sources & functions.
C. Explain types of fatty acids.

Q. No. 2 Short Essay (Attempt any 2) 2 x 10 = 20
A. Explain physical & chemical properties of fat.
B. Sources of vitamin B12
C. Functions of protein

Q. No. 3 Short Notes (Attempt any 4) 4 x 5 = 20
A. Importance of dietary fibre.
B. PUFA
C. Essential amino acids
D. Who invented double helicle structure of DNA & express it in labeled diagram.
E. Beta oxidation of fatty acids.

MODEL PAPER

B.Sc. Clinical Nutrition & Dietetics -I
Code BSC0723S203T

Second Semester
B.Sc. Clinical Nutrition & Dietetics
Examination Month Year
Paper - III
FOOD MICROBIOLOGY
Time: Three Hours
Maximum Marks: 70
Attempt all questions
All the parts of one question should be answered at one place.
Only one supplementary copy along with main answer book is allowed

Q. No. 1. Long Answer (Attempt any 2) 2 x 15 = 30
A. Explain food safety system of India.
B. Explain with diagram different types of bacteria.
C. Describe the factors responsible for growth of micro organisms.

Q. No. 2 Short Essay (Attempt any 2) 2 x 10 = 20
A. Explain food borne toxicity.
B. Explain about different types of microorganisms.
C. Explain microbiological water testing methods.

Q. No. 3 Short Notes (Attempt any 4) 4 x 5 = 20
A. Explain food borne infections.
B. Bacteria responsible for spoilage of milk.
C. How micro organisms are cultivated ?
D. What are quality control organizations in our country ?
E. Explain different types of molds.

MODEL PAPER

B.Sc. Clinical Nutrition & Dietetics -I
Code BSC0723S204T

Second Semester
B.Sc. Clinical Nutrition & Dietetics
Examination Month Year
Paper - IV
FOOD ADULTERATION
Time: Three Hours
Maximum Marks: 70
Attempt all questions
All the parts of one question should be answered at one place.
Only one supplementary copy along with main answer book is allowed

Q. No. 1. Long Answer (Attempt any 2) 2 x 15 = 30
A. Describe about food adulteration.

B. Different laws and standards to prevent food adulteration.
C. Explain about commonly adulterated foods with type of adulteration.

Q. No. 2 Short Essay (Attempt any 2) 2 x 10 = 20
A. Definition of adulteration with common adulterant found in chana dal
B. Write type of common adulterants found in milk and describe methods to identify these.
C. What are arjemone seeds?

Q. No. 3 Short Notes (Attempt any 4) 4 x 5 = 20
A. How to identify adulteration of starch in milk?
B. Describe adulteration found in ghee.
C. FSSAI regulations to check adulteration.
D. What is epidemic dropsy?
E. What food labeling is beneficial in identifying adulteration?

MODEL PAPER

B.Sc. Clinical Nutrition & Dietetics -I
Code BSC0723S205T

Second Semester
B.Sc. Clinical Nutrition & Dietetics
Examination Month Year
Paper - V
PRINCIPLE AND HISTORY OF NATUROPATHY
Time: Three Hours
Maximum Marks: 70
Attempt all questions
All the parts of one question should be answered at one place.
Only one supplementary copy along with main answer book is allowed

Q. No. 1. Long Answer (Attempt any 2) 2 x 15 = 30
A. Define Ten Principal of Naturopathy.
B. Define Panchmahabudh.
C. Define Mud.

Q. No. 2 Short Essay (Attempt any 2) 2 x 10 = 20
A. Define Hydrotherapy.
B. Hip Bath.
C. Foot and Arm Bath

Q. No. 3 Short Notes (Attempt any 4) 4 x 5 = 20
A. Jal Neti
B. Biography of Mahatma Gandhi
C. Biography of Vinobha Bhave
D. Biography of Luekune
E. Describe about chader lapet.

MODEL PAPER

B.Sc. Clinical Nutrition & Dietetics -I
Code BSC0723S206T

Second Semester
B.Sc. Clinical Nutrition & Dietetics
Examination Month Year
Paper - VI
Medical Terminology
Time: Three Hours
Maximum Marks: 70
Attempt all questions
All the parts of one question should be answered at one place.
Only one supplementary copy along with main answer book is allowed

Q. No. 1. Long Answer (Attempt any 2) 2 x 15 = 30
A. Define basic terms pertaining to the structure and function of body tissues.
B. Compare the location and function of smooth, cardiac, and skeletal muscle. Describe the mechanism of muscle contraction.
C. Describe and give the functions of the three types of blood cells.

Q. No. 2 Short Essay (Attempt any 2) 2 x 10 = 20
A. Describe the process of breathing and mention few diseases of the respiratory tract.
B. Explain the digestive system with neat and labeled diagram.
C. Write the meaning of following prefixes
Intra (b) Pseudo (c) Tachy (d) Homo (e) Meso

Q. No. 3 Short Notes (Attempt any 4) 4 x 5 = 20
A. Meningitis
B. Name any four bones of lower extremity.
C. Electroencephalogram.
D. Role of ovary in reproductive system.
E. Function of liver and gall bladder

MODEL PAPER

B.Sc. Clinical Nutrition & Dietetics -I
Code BSC0723S301T

Third Semester
B.Sc. Clinical Nutrition & Dietetics
Examination Month Year
Paper - I
BASICS OF HUMAN NUTRITIONAL REQUIREMENTS
Time: Three Hours
Maximum Marks: 70
Attempt all questions
All the parts of one question should be answered at one place.
Only one supplementary copy along with main answer book is allowed

Q. No. 1. Long Answer (Attempt any 2) 2 x 15 = 30
A. Describe direct and indirect caloriemetry.
B. How iron requirements were dervied for a pregnant woman?
C. Describe different methods to assess energy expenditure

Q. No. 2 Short Essay (Attempt any 2) 2 x 10 = 20
A. Name techniques for assessment of energy requirements
B. Explain about SDA
C. How to calculate RDA for energy for infants

Q. No. 3 Short Notes (Attempt any 4) 4 x 5 = 20
A. What are RDAs
B. What are EAR ?
C. Write short note on TUL.
D. Describe briefly obligatory nitrogen losses
E. What is factorial method?

MODEL PAPER

B.Sc. Clinical Nutrition & Dietetics -I
Code BSC0723S302T

Third Semester
B.Sc. Clinical Nutrition & Dietetics
Examination Month Year
Paper -II
PROBLEMS IN HUMAN NUTRITION
Time: Three Hours
Maximum Marks: 70
Attempt all questions
All the parts of one question should be answered at one place.
Only one supplementary copy along with main answer book is allowed

Q. No. 1. Long Answer (Attempt any 2) 2 x 15 = 30
A. Explain protein energy malnutrition.
B. Describe anthropometric measurement technique.
C. Write symptoms of zinc & selenium deficiency

Q. No. 2 Short Essay (Attempt any 2) 2 x 10 = 20
A. Explain about 24 hrs recall method
B. Explain about calcium & vitamin D deficiency disorders
C. Write difference among underweight, stunting & wasting.

Q. No. 3 Short Notes (Attempt any 4) 4 x 5 = 20
A. Write clinical signs of anemia & biochemical tests to diagnose it
B. Explain about fluorosis.
C. Write clinical signs & symptoms of vitamin A deficiency
D. Is overnutrition a problem?
E. What is beri – beri?

MODEL PAPER

B.Sc. Clinical Nutrition & Dietetics -I
Code BSC0723S303T

Third Semester
B.Sc. Clinical Nutrition & Dietetics
Examination Month Year
Paper -III
FOOD SCIENCE
Time: Three Hours
Maximum Marks: 70
Attempt all questions
All the parts of one question should be answered at one place.
Only one supplementary copy along with main answer book is allowed

Q. No. 1. Long Answer (Attempt any 2) 2 x 15 = 30
A. **Explain dry methods of food preservation ?**
B. Describe chemical & physical properties of cereals.
C. Describe physical & chemical properties of egg?

Q. No. 2 Short Essay (Attempt any 2) 2 x 10 = 20
A. Caramelization
B. Write methods of identification of fresh quality of egg
C. Saponification number

Q. No. 3 Short Notes (Attempt any 4) 4 x 5 = 20
A. Physical properties of emulsion with example
B. Maillard reaction.
C. Gelatinization
D. Syneresis
E. Milling process of wheat

MODEL PAPER

B.Sc. Clinical Nutrition & Dietetics -I
Code BSC0723S304T

Third Semester
B.Sc. Clinical Nutrition & Dietetics
Examination Month Year
Paper -IV
FOOD TOXICOLOGY
Time: Three Hours
Maximum Marks: 70
Attempt all questions
All the parts of one question should be answered at one place.
Only one supplementary copy along with main answer book is allowed

Q. No. 1. Long Answer (Attempt any 2) 2 x 15 = 30
A. Describe about antinutritional factors naturally found in foods.
B. What is the difference between permissible level & maximum residue level?
C. Explain about Botulism.

Q. No. 2 Short Essay (Attempt any 2) 2 x 10 = 20
A. Mention various food borne illnesses.
B. Describe food borne illnesses.
C. Toxic effects that may occur due to packaging.

Q. No. 3 Short Notes (Attempt any 4) 4 x 5 = 20
A. Dscribe about E Coli.
B. What is Salmonella infection?
C. Describe in brief about lythyrism
D. Types of toxins found in foodstuffs.
E. Write in brief about various methods to prevent toxicity

MODEL PAPER

B.Sc. Clinical Nutrition & Dietetics -I
Code BSC0723S305T

Third Semester
B.Sc. Clinical Nutrition & Dietetics
Examination Month Year
Paper -V
ORGANISATIONAL BEHAVIOUR
Time: Three Hours
Maximum Marks: 70
Attempt all questions
All the parts of one question should be answered at one place.
Only one supplementary copy along with main answer book is allowed

Q. No. 1. Long Answer (Attempt any 2) 2 x 15 = 30

A. "Different leadership styles exist in different times, different situations and with different people". Explain leadership in the light of this statement and suggest which leadership style(s) are best suited for a hospital administrator.

B. Explain the BIG five Personality trait model by taking the example of any social / political / public leader

C. How is individual decision making different than group decision making . Which situations are more appropriate for group decision making?

Q. No. 2 Short Essay (Attempt any 2) 2 x 10 = 20

A. Define perception and discuss any four frequently used shortcuts in judging others

B. Which motivational theories you think are most relevant for nurses in Hospital settings. Give reasons for your answers .

C. Explain any one learning theory and its implications in organizational settings.

Q. No. 3 Short Notes (Attempt any 4) 4 x 5 = 20

A. Differentiate a strong cultured organization from a weak cultured organization.

B. Explain the Lewin's model of change by taking example of resistance of health professionals towards health technology.

C. "Poor communication is the source of interpersonal conflict". Do you agree? What are the 7Cs of effective communication ?

D. Discuss any three conflict handling strategies

E. What do you understand by power and politics in Organisational context

MODEL PAPER

B.Sc. Clinical Nutrition & Dietetics -I
Code BSC0723S306T

Third Semester
B.Sc. Clinical Nutrition & Dietetics
Examination Month Year
Paper -VI
BASIC LIFE SUPPORT (BLS)
Time: Three Hours
Maximum Marks: 70
Attempt all questions
All the parts of one question should be answered at one place.
Only one supplementary copy along with main answer book is allowed

Q. No. 1. Long Answer (Attempt any 2) 2 x 15 = 30
A. Describe basic life support for adults with diagrams.
B. Describe basic life support for infants and children.
C. What is defibrillator? Explain in detail.

Q. No. 2 Short Essay (Attempt any 2) 2 x 10 = 20
A. Make a flow chart for compression only life support algorythm.
B. What is cardiac arrest?
C. What is respiratory arrest?

Q. No. 3 Short Notes (Attempt any 4) 4 x 5 = 20
A. IHCA
B. OHCA
C. Explain about pediatric chain of survival
D. Management of choking
E. Explain role of team leader.

MODEL PAPER

B.Sc. Clinical Nutrition & Dietetics -I
Code BSC0723S401T

Fourth Semester
B.Sc. Clinical Nutrition & Dietetics
Examination Month Year
Paper -I
FOOD SAFETY
Time: Three Hours
Maximum Marks: 70
Attempt all questions
All the parts of one question should be answered at one place.
Only one supplementary copy along with main answer book is allowed

Q. No. 1. Long Answer (Attempt any 2) 2 x 15 = 30
A. Describe various methods of safe food packaging techniques.
B. Explain about FSSAI food safety guidelines for food service industry
C. What are pesticidal residues?

Q. No. 2 Short Essay (Attempt any 2) 2 x 10 = 20
A. Write name of emulsifiers.
B. Antioxadants.
C. What are stabilizers ?

Q. No. 3 Short Notes (Attempt any 4) 4 x 5 = 20
A. Write name of Food Laws & standards in India.
B. What is safe temperature to store or serve food
C. What precautions can one take at the time of transportation of milk.
D. Role of food inspectors in food safety
E. Food borne illnesses due to unsafe food handling.

MODEL PAPER

B.Sc. Clinical Nutrition & Dietetics -I
Code BSC0723S402T

Fourth Semester
B.Sc. Clinical Nutrition & Dietetics
Examination Month Year
Paper -II
FOOD SERVICE MANAGEMENT
Time: Three Hours
Maximum Marks: 70
Attempt all questions
All the parts of one question should be answered at one place.
Only one supplementary copy along with main answer book is allowed

Q. No. 1. Long Answer (Attempt any 2) 2 x 15 = 30
A. Explain work simplification methods in institutions.
B. Explain types of meal services.
C. Describe steps in process of organization

Q. No. 2 Short Essay (Attempt any 2) 2 x 10 = 20
A. Properties of a food service manager.
B. What are the points kept in mind while giving recruitment advertisement in a newspaper.
C. Describe methods of selection of personnel.

Q. No. 3 Short Notes (Attempt any 4) 4 x 5 = 20
A. Types of institutions where food is prepared / served
B. What is Ala carte menu service?
C. Definition of management.
D. Cost control & pricing.
E. Work simplification methods

MODEL PAPER

B.Sc. Clinical Nutrition & Dietetics -I
Code BSC0723S403T

Fourth Semester
B.Sc. Clinical Nutrition & Dietetics
Examination Month Year
Paper -III
NUTRITIONAL EPIDEMIOLOGY & ANTHROPOLOGY
Time: Three Hours
Maximum Marks: 70
Attempt all questions
All the parts of one question should be answered at one place.
Only one supplementary copy along with main answer book is allowed

Q. No. 1. Long Answer (Attempt any 2) 2 x 15 = 30
A. Write definition and scope of epidemiology.
B. What are the determinants of MCH & indicators commonly used to track maternal/ child health & nutrition
C. Define commonly used epidemiological indicators like Crude death rate, IMR, U5 MR, Birth rate, Fertility rate and Maternal mortality rate/ratio

Q. No. 2 Short Essay (Attempt any 2) 2 x 10 = 20
A. Status of maternal & child nutrition/health as per latest surveys
B. Describe NFHS & NNMB surveys.
C. Describe vital statistics and causes of IMR, NMR, MMR, Under 5 Mortality rates & its relationship with nutrition.

Q. No. 3 Short Notes (Attempt any 4) 4 x 5 = 20
A. What is anthropology?
B. What is the prevalence ofanemia in Indian women?
C. Write short note on MMR.
D. Define MICS
E. Describe micronutrient deficiency rate in India

MODEL PAPER

B.Sc. Clinical Nutrition & Dietetics -I
Code BSC0723S404T

Fourth Semester
B.Sc. Clinical Nutrition & Dietetics
Examination Month Year
Paper -IV
BASIC PRINCIPLE AND HISTORY OF YOGA

Time: Three Hours
Maximum Marks: 70
Attempt all questions
All the parts of one question should be answered at one place.
Only one supplementary copy along with main answer book is allowed

Q. No. 1. Long Answer (Attempt any 2) 2 x 15 = 30
A. Describe eight Lims of Yoga.
B. Describe Philosophy of Yoga.
C. Describe Schools of Yoga.

Q. No. 2 Short Essay (Attempt any 2) 2 x 10 = 20
A. Define Bhakti Yoga.
B. Jal Neti.
C. Kapalbhati

Q. No. 3 Short Notes (Attempt any 4) 4 x 5 = 20
A. Tratak
B. Any Two Pranayam
C. Anulom & Vilom
D. Dhoti
E. Asanas

MODEL PAPER

B.Sc. Clinical Nutrition & Dietetics -I
Code BSC0723S405T

Fourth Semester
B.Sc. Clinical Nutrition & Dietetics
Examination Month Year
Paper -V
SOFT SKILLS

Time: Three Hours
Maximum Marks: 70
Attempt all questions
All the parts of one question should be answered at one place.
Only one supplementary copy along with main answer book is allowed

Q. No. 1. Long Answer (Attempt any 2) 2 x 15 = 30

A. **What are the barriers of communication?**

B. Describe the para language and explain communication without words.

C. Illustrate the types of listening and write the importance of organizational communication.

Q. No. 2 Short Essay (Attempt any 2) 2 x 10 = 20

A. Explain the types of business letters.

B. Demonstrate the structure of business report.

C. Describe the classification of oral skills and write the methods available to reveal the oral skills.

Q. No. 3 Short Notes (Attempt any 4) 4 x 5 = 20

A. How will you make effective presentations for meetings?

B. Design the resume for your qualifications and skills – to apply for the job in tertiary hospital.

C. What are the features of public speaking

D. Write a Circular of announcing the details and the orders to be followed for the Independence Day celebrations in your college.

E. An accident happened at 11.30 a.m. on Mount Road. A 40 year old woman was injured. Write a report to the News Paper narrating the incident.

MODEL PAPER

B.Sc. Clinical Nutrition & Dietetics -I
Code BSC0723S406T

Fourth Semester
B.Sc. Clinical Nutrition & Dietetics
Examination Month Year
Paper -VI
ESSENTIALS OF DEMOGRAPHY

Time: Three Hours
Maximum Marks: 70
Attempt all questions
All the parts of one question should be answered at one place.
Only one supplementary copy along with main answer book is allowed

Q. No. 1. Long Answer (Attempt any 2) 2 x 15 = 30
A. Define demography. Write the scope and importance of demography and illustrate the various disciplines connected with demography.
B. Explain the various questions in 2021 census, describe the new inclusions in the questionnaire.
C. What are the basic measures of fertility?

Q. No. 2 Short Essay (Attempt any 2) 2 x 10 = 20
A. What is the importance of mortality in developing nation?
B. Illustrate various theories on fertility.
C. Who is migrant? What are the types of migration and illustrate the problems of urban migration.

Q. No. 3 Short Notes (Attempt any 4) 4 x 5 = 20
A. Elucidate population pyramids. How age structure affects the population process
B. Describe any five ideal facts of census 2021-with respect to Indian healthcare.
C. What are the major reasons for urban migration
D. What are the measures of mortality
E. What is the connection between demography and other disciplines

MODEL PAPER

B.Sc. Clinical Nutrition & Dietetics -I
Code BSC0723S501T

Fifth Semester
B.Sc. Clinical Nutrition & Dietetics
Examination Month Year
Paper -I
FAMILY MEAL MANAGEMENT

Time: Three Hours
Maximum Marks: 70
Attempt all questions
All the parts of one question should be answered at one place.
Only one supplementary copy along with main answer book is allowed

Q. No. 1. Long Answer (Attempt any 2) 2 x 15 = 30
A. Describe about factors affecting menu planning for a family.
B. What are the factors affecting meal planning of an infant. Nutrients of importance in this age group and plan a day's diet for a 1 year old infant .
C. Advantages of breast feeding.

Q. No. 2 Short Essay (Attempt any 2) 2 x 10 = 20
A. Write dietary guidelines & describe these.
B. Colostrum
C. Food exchange list

Q. No. 3 Short Notes (Attempt any 4) 4 x 5 = 20
A. Write dietary goals
B. Factors affecting diet plan of an elderly.
C. Factors affecting diet plan of a pregnant female.
D. Plan a day's diet for a 16 year old boy with sedentary activity.
E. What points should be taken care of while purchasing meals for a family?

MODEL PAPER

B.Sc. Clinical Nutrition & Dietetics -I
Code BSC0723S502T

Fifth Semester
B.Sc. Clinical Nutrition & Dietetics
Examination Month Year
Paper -II
THERAPEUTIC NUTRITION I

Time: Three Hours
Maximum Marks: 70
Attempt all questions
All the parts of one question should be answered at one place.
Only one supplementary copy along with main answer book is allowed

Q. No. 1. Long Answer (Attempt any 2) 2 x 15 = 30
A. Describe modifications with reasons in the diet of weight reduction.
B. Explain different types of feeding methods.
C. Points to be taken into account while planning meals for a diabetic person.

Q. No. 2 Short Essay (Attempt any 2) 2 x 10 = 20
A. Explain different types of Gi tract disorders.
B. What is IBD?
C. What is BMI classification?

Q. No. 3 Short Notes (Attempt any 4) 4 x 5 = 20
A. What is lactose intolerance?
B. Write types of diets given in a hospital.
C. Which type of diet would you recommend for a liver cirrhosis patient?
D. What points will you keep in mind while planning meals for a diabetic patient.
E. How we adapt normal diet into therapeutic diet?

MODEL PAPER

B.Sc. Clinical Nutrition & Dietetics -I
Code BSC0723S503T

Fifth Semester
B.Sc. Clinical Nutrition & Dietetics
Examination Month Year
Paper -III
THERAPEUTIC NUTRITION II

Time: Three Hours
Maximum Marks: 70
Attempt all questions
All the parts of one question should be answered at one place.
Only one supplementary copy along with main answer book is allowed

Q. No. 1. Long Answer (Attempt any 2) 2 x 15 = 30
A. Describe modifications with reasons in the diet of atherosclerosis.
B. Explain dietary management of ICU care setting patient.
C. Points to be taken into account while planning meals for a CKD patient.

Q. No. 2 Short Essay (Attempt any 2) 2 x 10 = 20
A. Dietary managment of patient with hemiparesis .
B. What is neutropenic diet?
C. What is ESRD?

Q. No. 3 Short Notes (Attempt any 4) 4 x 5 = 20
A. What is the formula to calculate GFR?
B. Curreri formula.
C. Explain factors affecting diet plan of a burn patient?
D. What points will you keep in mind while planning meals for a cancer patient.
E. Explain nutrition during stress situation.

MODEL PAPER

B.Sc. Clinical Nutrition & Dietetics -I
Code BSC0723S504T

Fifth Semester
B.Sc. Clinical Nutrition & Dietetics
Examination Month Year
Paper - IV
HOSPITAL HAZARDS & DISASTER MANAGEMENT

Time: Three Hours
Maximum Marks: 70
Attempt all questions
All the parts of one question should be answered at one place.
Only one supplementary copy along with main answer book is allowed

Q. No. 1. Long Answer (Attempt any 2) 2 x 15 = 30
A. Define the term hazards and Health hazards. Types of hospital hazards and methods to prevent/ manage them.
B. Explain what do you mean by sewage? Explain the different stages involved in modern sewage treatment plant.
C. Explain the process of managing biomedical waste for hospital?

Q. No. 2 Short Essay (Attempt any 2) 2 x 10 = 20
A. Explain the process of forecasting in disaster management?
B. What measures can be taken to prevent fire accidents in hospitals ?
C. Explain the benefits of TPA to hospitals and patients? Explain with the help of an example

Q. No. 3 Short Notes (Attempt any 4) 4 x 5 = 20
A.What do you understand by flood disaster? What can be done to avoid major damages from flood disaster?
B. Explain the non service type of methods of excreta disposal.
C. Write short notes on –Role of Panchayat id disaster management- Color code of segregated biomedical waste-BOD and COD.
D. Write the process of microwaving and deep burial to avoid infection.
E. Illustrate various electrical hazards in hospitals.

MODEL PAPER

B.Sc. Clinical Nutrition & Dietetics -I
Code BSC0723S505T

Fifth Semester
B.Sc. Clinical Nutrition & Dietetics
Examination Month Year
Paper -V
THERAPEUTIC YOGA

Time: Three Hours
Maximum Marks: 70
Attempt all questions
All the parts of one question should be answered at one place.
Only one supplementary copy along with main answer book is allowed

Q. No. 1. Long Answer (Attempt any 2) 2 x 15 = 30
A. Define Yogik Practice of Asthma.
B. Describe Ahar Vihar in detail.
C. Define Yogik Management for respiratory.

Q. No. 2 Short Essay (Attempt any 2) 2 x 10 = 20
A. Define Neurological disorder
B. Yogik Management for dysthymia.
C. Define Niyam.

Q. No. 3 Short Notes (Attempt any 4) 4 x 5 = 20
A. Explain ante-natal care.
B. Explain ulcerative colitis.
C. Explain management of neck pain through yoga therapy.
D. Define management of anxiety disorder through yoga therapy.
E. What is pranayam?

MODEL PAPER

B.Sc. Clinical Nutrition & Dietetics -I
Code BSC0723S506T

Fifth Semester
B.Sc. Clinical Nutrition & Dietetics
Examination Month Year
Paper - VI
QUALITY IN HEALTHCARE

Time: Three Hours
Maximum Marks: 70
Attempt all questions
All the parts of one question should be answered at one place.
Only one supplementary copy along with main answer book is allowed

Q. No. 1. Long Answer (Attempt any 2) 2 x 15 = 30
A. Define quality?Briefly explain the steps entailed for the measurement of quality?
B. Explain the process of improving quality healthcare through patients at infaction survey?
C. Explain the organization of quality management system? What is Deming's contribution and his management guideline?

Q. No. 2 Short Essay (Attempt any 2) 2 x 10 = 20
A. What is TQM? What are the principles of TotalQualityManagement? What are the obstacles in implementing TQM?
B. Define meaning and significance of six sigma.
C. Explain Cause and Effect Diagram

Q. No. 3 Short Notes (Attempt any 4) 4 x 5 = 20
A. Pareto chart
B. Types of Audit conducted in Hospitals
C. Bench marking
D. Business process reengineering (BPR)
E. Accreditation in Hospitals

MODEL PAPER

B.Sc. Clinical Nutrition & Dietetics -I
Code BSC0723S601T

Sixth Semester
B.Sc. Clinical Nutrition & Dietetics
Examination Month Year
Paper - I
BIO STATISTICS

Time: Three Hours
Maximum Marks: 70
Attempt all questions
All the parts of one question should be answered at one place.
Only one supplementary copy along with main answer book is allowed

Q. No. 1. Long Answer (Attempt any 2) 2 x 15 = 30
A. What are the different types of data and illustrate different scales of data measurement?
B. What are the two methods of mean calculation? Find the mean value for below data by these two methods. Heights in centimeters for 7 pediatric patients are given below.140 may be taken as the working origin to calculate the mean height. [148,143, 160, 152, 157, 150, 155]
C. Define correlation and explain the types of correlation with diagrammatic representation.

Q. No. 2 Short Essay (Attempt any 2) 2 x 10 = 20
A. Illustrate hospital statistics and their calculation methods.
B. Write in detail- what are tests are available for hypothesis testing and illustrate the conditions for every test.
C. Find the upper quartile, lower quartile, median and IQR for the following set of numbers, also present the data in box and whisker plot. [27, 19, 5, 7, 6, 9, 15, 12, 18, 2, 1]

Q. No. 3 Short Notes (Attempt any 4) 4 x 5 = 20
A. What are the measures of dispersion?
B. What is the quartile deviation for the following set of numbers? 10, 99, 87, 45, 67, 43, 45, 33, 21, 7, 65, 98?
C. Describe the measurement of disease frequency.
D. write about any epidemiological research methods.
E. Illustrate various sampling techniques.

MODEL PAPER

B.Sc. Clinical Nutrition & Dietetics -I
Code BSC0723S602T

Sixth Semester
B.Sc. Clinical Nutrition & Dietetics
Examination Month Year
Paper - II
ADVANCED NUTRITION

Time: Three Hours
Maximum Marks: 70
Attempt all questions
All the parts of one question should be answered at one place.
Only one supplementary copy along with main answer book is allowed

Q. No. 1. Long Answer (Attempt any 2) 2 x 15 = 30
A. **Explain nutritional management in emergency situations**
B. Describe in detail about dietary management of an athelete.
C. Describe in detail about functional foods & antioxidants

Q. No. 2 Short Essay (Attempt any 2) 2 x 10 = 20
A. What points should be taken care of while planning diet for an astronaut?
B. Plan a day's diet for a male living in high altitude.
C. Describe nutraceuticals.

Q. No. 3 Short Notes (Attempt any 4) 4 x 5 = 20
A. Define Probiotics
B. What is nutrigenomics?
C. Plan a diet for famine condition
D. Explain different types of fad diets.
E. What are organic foods?

MODEL PAPER

B.Sc. Clinical Nutrition & Dietetics -I
Code BSC0723S603T

Sixth Semester
B.Sc. Clinical Nutrition & Dietetics
Examination Month Year
Paper - III
PUBLIC NUTRITION

Time: Three Hours
Maximum Marks: 70
Attempt all questions
All the parts of one question should be answered at one place.
Only one supplementary copy along with main answer book is allowed

Q. No. 1. Long Answer (Attempt any 2) 2 x 15 = 30
A. Explain the concept and scope of public nutrition in detail.
B. Describe the role of public health nutritionist and how it can bring change in a community?
C. Describe health care delivery system.

Q. No. 2 Short Essay (Attempt any 2) 2 x 10 = 20
A. Describe etiology and clinical features of undernutrition in a community.
B. What is PEM ?
C. Describe overnutrition related diseases of community in a developing country like India.

Q. No. 3 Short Notes (Attempt any 4) 4 x 5 = 20
A. Describe anthropometric measurements.
B. Types of audio visual aids used in community education
C. Whats are barriers of communication ?
D. What is ICDS ?
E. What is PDS ?

MODEL PAPER

B.Sc. Clinical Nutrition & Dietetics -I
Code BSC0723S604T

Sixth Semester
B.Sc. Clinical Nutrition & Dietetics
Examination Month Year
Paper - IV
HOSPITALS & HEALTH SYSTEM

Time: Three Hours
Maximum Marks: 70
Attempt all questions
All the parts of one question should be answered at one place.
Only one supplementary copy along with main answer book is allowed

Q. No. 1. Long Answer (Attempt any 2) 2 x 15 = 30
A. Elaborate Indian healthcare system, health insurance and health care financing. Please provide latest data and also quote suitable references.
B. Explain Moral hazards, ESIC, CGHS and health Insurance with suitable examples wherever necessary.
C. What do you mean by risk? Write the classification of risk and discuss various types ofrisk?

Q. No. 2 Short Essay (Attempt any 2) 2 x 10 = 20
A. Explain hospital as a system. What roles, responsibilities and peculiarities any hospital system performs andpasses through? Elaborate with example.
B. Write a brief note on reforms in healthcare system taken in India in last ten years. Has it helped the general population? If yes, explain?
C. What recent trends in healthcare system have been imbibed by our country? Has it improved our healthcare system? Explain with relevant examples ?

Q. No. 3 Short Notes (Attempt any 4) 4 x 5 = 20
A. Write the classification of health insurance products. Describe the salient features of health insurance contract.
B. Explain the process of claims management in hospitals. What role TPA and customer relationship management plays?
C. Illustrate any 2 national health programs run by the Ministry of Health and family welfare.
D. What is the concept behind diseases.
E. Write about the determinants of health.

MODEL PAPER

B.Sc. Clinical Nutrition & Dietetics -I
Code BSC0723S605T

Sixth Semester
B.Sc. Clinical Nutrition & Dietetics
Examination Month Year
Paper - V
PROJECT MANAGEMENT

Time: Three Hours
Maximum Marks: 70
Attempt all questions
All the parts of one question should be answered at one place.
Only one supplementary copy along with main answer book is allowed

Q. No. 1. Long Answer (Attempt any 2) 2 x 15 = 30

A. Examine the process of project Management highlighting the importance stages.

B. There exists a trade -off between activity duration and the associated cost. Discuss the time/cost trade off in project management. When should one resort to crashing? Discuss.

C. Regular reporting helps monitoring the progress of the project. List out three importance types of reports that need to be generated under each of the following:

(i) Project Monitoring Reports
(ii) Management Reports

Q. No. 2 Short Essay (Attempt any 2) 2 x 10 = 20

A. As a project manager how would you go ahead with your project appraisal. Evaluate the different aspects to be employed for this purpose

B. Explain the principle objectives of 'feasibility analysis'? When and why a feasibility report prepared?

C. Critically point out the special features of project profitability analysis techniques

Q. No. 3 Short Notes (Attempt any 4) 4 x 5 = 20

A. Prepare a checklist, which can facilitate a project manager in designing a project report.

B. Write short note on Social Cost Benefit Analysis (SCBA) of project.

C. Explain in detail Work Breakdown Structure (WBC).

D. Explain in detail Linear Responsibility Chart (LRC).

E. Explain Gantt charts.

MODEL PAPER

B.Sc. Clinical Nutrition & Dietetics -I
Code BSC0723S606T

Sixth Semester
B.Sc. Clinical Nutrition & Dietetics
Examination Month Year
Paper - VI
CLINICAL PSYCHOLOGY

Time: Three Hours
Maximum Marks: 70
Attempt all questions
All the parts of one question should be answered at one place.
Only one supplementary copy along with main answer book is allowed

Q. No. 1. Long Answer (Attempt any 2) 2 x 15 = 30

A. Distinguish between behavioural model and Phenomenological model of Clinical Psychology.

B. Describe the clinical types of Psychological Test. Throw light on its diagnostic uses.

C. Describe the important stages involved in function of psycho-analytical therapy. Discuss its merits and demerits.

Q. No. 2 Short Essay (Attempt any 2) 2 x 10 = 20

A. Distinguish between medical research and psychotherapeutic research.

B. Evaluate Ego-analytic therapy.

C. Describe any two types of group therapy.

Q. No. 3 Short Notes (Attempt any 4) 4 x 5 = 20

A. Discuss the merits and demerits of Gestal therapy.

B. Write short note Minimal Brain Dysfunction (MBD)

C. Write short notes Bender-Gestalt Test

D. Distinguish between mental health and mental illness.

E. Explain Systematic desensitization