

**PITHAPUR RAJAH'S GOVERNMENT COLLEGE
(AUTONOMOUS)
KAKINADA
(Affiliated to Adikavi Nannaya University)**



BOARD OF STUDIES

DEPARTMENT OF FOODSCIENCE

(2022-23)

(CHOICE BASED CREDIT SYSTEM)

**P.R.GOV.T. COLLEGE (AUTONOMOUS) KAKINADA 2022 -2023
BOARD OF STUDIES MEETING –Dt.03-12-2022 DEPARTMENT OF
FOOD SCIENCE**

The members present have discussed the syllabi and model question papers (Theory and Practical) related to I to VI semesters in Food Science and made the following resolutions.

Resolution I : Resolved to continue CBCS System as instructed by (Commissioner of Collegiate Education) CCE, Vijayawada.

Resolution II: It is resolved to implement 50% external & 50% internal marks from the academic year 2021-2022 for first year students only. 60% external and 40% internal from the academic year 2021-2022 for second- & third-year students.

Resolution III: Resolved to reduce 40 marks of Theory internal to 20 marks for mid exams and 20 marks for co-curricular activities (Seminar / Assignment / Quiz / Group Discussion) and reduce 50 marks of theory internal to 25 marks for mid exams and 25 marks for co-curricular activities (Seminar / Assignment / Quiz / Group Discussion).

Resolution IV: Resolved to conduct Practical Examination also at the end of each semester even for I year II year students.

Resolution V : Resolved to follow the same syllabus and exam pattern for the coming II and III year students.

Resolution VI: Resolved to follow the same syllabus for I year which is prescribed by APSCHE in the near future.

Resolution VII: Resolved to continue two subject electives in Fifth Semester as Advanced Electives (Elective 1-Food safety and quality control and elective -2 – Principles of Human nutrition) and in Sixth Semester two Skill Based Electives (Elective 1 – Food product development and quality evaluation and Elective 2 – Clinical and therapeutic nutrition).

Resolution VIII: Resolved to continue the same paper setters and examiners for all Semesters. (List of Paper setters and Examiner is appended)

Resolution IX: Resolved to include Blue Prints for model question papers for all semesters.

Resolution X: Resolved to encourage the students enroll in credit based online courses in Food Science

Resolution XI: Resolved to initiate certificate course in food science for III year students

Course outcomes

- By the end of 1 year student will acquire the knowledge on raw and processed food in food industries and also know the basics of macro and micro constituents of the food. The student will know the about different constituents of food.
- By the end of I year student will acquire the knowledge understand the necessity of energy and its production in the body and also know the about the adulterants of food, and food born diseases including health hazards.
- By the end of IIIyear student will acquire the complete knowledge of different food products and their processing. He/ She will gain knowledge on the nutritional requirements of different age groups. The student will also acquire the basic knowledge of different applications of food science.

The student finally by the end of the 3rd year course will gain enough knowledge on the food science and will be able to pursue his higher education in the relevant field.

**PROCEEDINGS OF THE PRINCIPAL, P.R.GOVERNMENT COLLEGE(A),
KAKINADA-A.P**

Present: DR. B.V. TIRUPANYAM, M.Sc;Ph.D.

R.C.No.12A/A.C./BOS/2022-23, Dated:24.09.2022

SUB: P.R. Government College(A), Kakinada-UG Board of Studies (BOS)-
Program/Course-B.Sc./Foodscience,Nomination of Members-Orders issued.

REF: 1.UGC Guidelines of for Autonomous Colleges-2018.

ORDERS:

The Principal, P.R. Government College(A), Kakinada is pleased to constitute UG Boards of Studies in Biochemistry for framing the syllabi in Food science Subject for all Semesters duly following the norms of the UGC Autonomous guidelines.

S. No	Name of the Nominee	Designation	Signature
1	Dr.D.ChennaRao	Chairman	
2	Smt. M. Suvarchala	University Nominee Lecturer in Home science A S D Govt. Degree College (Autonomous),Kakinada.	
3	Smt .V .Ananthalakshmi	Subject Expert Lecturer in Chemistry Govt Degree College, Pithapuram.	
4	Sri. V. Mallikarjunasarma	Subject Expert Lecturer in chemistry ASD Govt. Degree College (Autonomous), Kakinada.	
5	M. Krishna rao	Member	
6	B. Mounika	Member	
7	N.Swathi	Member	
8		Member	
9		Member	
10		Member	
11		Member	
12		Member	
13	S. Srilatha	Member	
14	N.Gurudev	Student Alumini member	
15	S. Mohini lakshmi(IIFBC)	Student Member	
16	N. M. R. G. Vinay(IIFBC)	Student Member	
17	V. Ganesh(IFBC)	Student Member	
18	K. Abhinayatulasi(IFBC)	Student Member	

The above members are requested to attend the BOS meeting on 12-3-2022 and share their valuable reviews, and suggestions on the following functionaries.

- Prepare syllabi for the subject keeping in view the objectives of the college, interest of the stakeholders and National requirement for consideration and approval of the IQAC and Academic Council.
- Suggested methodologies for innovative teaching and evaluation techniques.
- Suggest the panel of Names to the academic council for appointment of Examiners.
- Coordinate research, teaching, extension and other activities in the Department of the college.

PRINCIPAL
P.R.Government College(A),Kakinada

ACTION PLAN BOS MEETING -LCD HALL -1 HELD ON 02 -12 - 2021.

Department activities for the academic year 2022-2023.

Annexure I

**1. Organizing National/ State level seminars/Workshops/ Conferences/ Training Programmes etc., with topics and other details.
(Mandatory for each Department)**

i) National Nutrition week- First week of September

ii) Awareness on FOOD ADULTRATION

iii) World Nutrition Day – Last week of May

iv) Food Fest

v) National Science Day 2021- Last week of February

vi) Guest lectures

vii) National seminar in food Nutrition.

➔ viii) World Vegetarian Day – First week of october

P.R. GOVT.COLLEGE(AUTONOMOUS)KAKINADA
DEPARTEMENT OF BIOCHEMISTRY AND FOOD SCIENCE
BOARD OF STUDIES MEETING IN FOODSCIENCE
2022-2023
LISTOFEXAMINERS

S.No	Name of the Examiner	Subject	Nameof theCollege
1	D. Kalyani	Assistant professor in Biosciences	Adikavi Nannaya University RAJAHMAHENDRAVARM.
2	Dr. P. Jyothi Kumari	Lecturer in Biosciences	St. Theresa Degree College, Eluru.
3	Dr. Srirangam	Lecturer in Food Technology	Layola College Vijayawada.
4	G. V. Sowmya	Lecturer in Biosciences	Dr.V.S.Krishna Degree College, Visakhapatnam.
5	Dr. Sandeep	Assistant Professor in Biosciences	Gitam University, Visakhapatnam.

ACTION PLAN BOS MEETING-FOODSCIENCE HELD ON 12-3-2022.

Department activities for the academic year 2022-2023.

Organizing National/ State level seminars/Workshops/ Conferences/ Training Programs ,etc., with topics and other details.

(Mandatory for each Department)

Annexure I

- i) Nutrition week- First week of September
- ii) Awareness on FOOD ADULTRATION
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- v) National Science Day 2021- Last week of February
- vi) Guest lectures
- vii) National seminar in food Nutrition.
- viii) World Vegetarian Day – First week of october

P.R.GOV.T. COLLEGE (AUTONOMOUS)KAKINADA DEPARTMENT OF FOOD SCIENCE

Course Objectives

Objectives:

- 1.To understand the basic commodities both raw and processed food in food industries and various aspects of their production and distribution.
- 2.To discuss the qualities and standards of available commodities and their suitability for different purpose.

Objectives:

To enable the students to:

- 1.Acquire knowledge on the macro and micro constituents of the food.
- 2.Know the structure and chemical & biological characteristics of constituents of food.

Objectives:

- 1.To enable the students to understand the necessity of energy and its production in the body.
- 2.To understand the relationship between nutrition and human well being

Objectives:

- 1.To help the students to acquire an elementary knowledge about microorganisms, develop an understanding of industry and in maintenance of health
- 2.To acquire knowledge about the adulterants of food, food born diseases and health hazards.

Objectives:

- 1.To help the students to acquire an elementary knowledge about Food processing of different foods.
- 2.To acquire knowledge about the preservation of foods and different techniques of preservation.

Objectives:

- 1.To enable the students to understand the importance of nutrition in different stages of life cycle
- 2.To enable the students to understand the nutritional requirements in pregnancy, preschool age, and old age

Objectives:

- 1.To enable students to develop new food products which are marketable and nutritionally and economically viable.
- 2.To develop entrepreneurial abilities for small scale food industries

B. Sc Food Science, Biochemistry and Chemistry Course

PROGRAMME OUTCOMES

For Every degree program expectations are listed out by the institution under the Program Outcomes. For B. Sc Biochemistry, Food Science and Chemistry Stream the following are set as Programme Outcomes.

PO1. Knowledge and understanding of:

1. Students will be able design, conduct experiments, analyze and interpret data for investigating problems in Biotechnology and allied fields.
2. Describe how scientific methodologies are used to conduct experiments products.
3. The students understood the concept of cell and their activities.

PO2. Intellectual skills - be able to:

1. Think logically and organize tasks into a structured form.
2. Assimilate knowledge and ideas based on wide reading and through the internet.
3. Transfer of appropriate knowledge and methods from one topic to another within the subject.
4. Understand the evolving state of knowledge in a rapidly developing field.
5. Construct and test hypothesis. 6. Plan, conduct and write a report on an independent term project.

PO3. Practical skills:

1. Understand the importance of laboratory security as it applies to working with hazardous chemicals, biohazards, recombinant material, and general biotechnology security precautions.
2. Students will evaluate the accuracy of different types of measuring devices to accurate measure a solution. They will statistically analyze their data to determine the best measuring device to use.
3. Characterize isolated DNA and RNA using agarose gel electrophoresis and analyze agarose gel data.
4. Perform basic microbiological techniques such as sterile plating and isolation of single colonies, culturing bacteria in liquid broth.
5. PCR amplify target genomic DNA and ligate into vector and transform bacteria with rDNA.

PO4. Transferable skills:

1. Use of IT (word-processing, use of internet, statistical packages and databases).
2. Communication of scientific ideas in writing and orally.
3. Ability to work as part of a team.
4. Ability to use library resources/Equipment.
5. Time management.

PO5. Problem analysis

1. Identify the taxonomic position of animals
2. Design solutions from medicinal animals for health problems, disorders and disease of human beings /animals which meet the specified needs.
3. Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data.

PO6. Environment and sustainability:

1. Understanding of the causes, types and control methods for Environmental Pollution.
2. Application of different life forms in Environmental Remediation.

PO7. Ethics:

1. Apply ethical principles and commit to environmental ethics and responsibilities and norms of the environment

PO8. Individual and team work:

1. Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
2. Elicit views of others, mediate disagreements and help reach conclusions in group settings.

PO9. Communication:

1. Communicate effectively on complex group activities and with society at large. Speak, read, write and listen clearly in person and through electronic media in English and in one Indian language Manage projects and in multidisciplinary environments.

PO10. Critical Thinking:

1. Take informed actions after identifying the assumptions that frame our thinking and actions, checking out the degree to which these assumptions are accurate and valid, and looking at our ideas and decisions (intellectual, organizational, and personal) from different perspectives.

PO11. Effective Citizenship:

1. Demonstrate empathetic social concern and equity centered national development, and the ability to act with an informed awareness of issues and participate in civic life through volunteering.

PO12. Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Course Outcomes

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BOARD OF STUDY MEETING 2022-23
CHOICE BASED CREDIT SYSTEM FOR ADMITTED BATCH 2022-2023
I YEAR FBC

**CHOICE BASED CREDIT SYSTEM FOR ADMITTED BATCH 2021-2022
I YEAR FBC**

YEAR	SEMESTER	PAPER	TITLE	No. of Hrs./ Week	No of credits	Evaluation		
						Internal	External	TOTAL
I	I	I	Raw and processed commodities in Food Science	4	2	50	50	100
			Practical – I	2	1	15	35	50
	II	II	Food Biochemistry	4	2	50	50	50
			Practical – II	2	1	15	35	50

P.R.GOV.T.COLLEGE(AUTONOMOUS)KAKINADADEPARTMENT OF FOOD SCIENCE
BOARD OF STUDY MEETING 2022-23
CHOICE BA ADMITTED BATCH 2022-2023
II YEAR FBC

IIYEAR FBC SEMESTER-III,IV

YEAR	SEMESTER	PAPER	TITLE	No. of Hrs./ Week	No of credits	Evaluation		
						Internal	External	TOTAL
II	III	III	Human physiology	4	2	50	50	100
			Practical-III	2	1		50	50
	IV	IV	Food microbiology	4	2	50	50	100
			Practical-IV	2	1		50	50
		V	Human nutrition	4	2	50	50	100
			Practical- V	2	1		50	50

P.R.GOV.T.COLLEGE(AUTONOMOUS)KAKINADA

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BOARD OF STUDY MEETING 2022-23

CHOICE BASED CREDIT SYSTEM

ADMITTED BATCH 2020-2023

IIYEAR FBC SEMESTER-V

YEAR	SEMESTER	PAPER	TITLE	No. of Hrs./ Week	No of credits	Evaluation		
						Internal	External	TOTAL
III	V	V	Food processing & preservation	3	4	40	60	100
			Practical- V	2	2	15	35	50
		VI	Clinical therapeutic nutrition	3	4	40	60	100
			Practical-VI	2	2	15	35	50

P.R.GOV.T.COLLEGE(AUTONOMOUS)KAKINADA

DEPARTMENT OF FOODSCIENCE

BOARD OF STUDY MEETING 2022-23

CHOICE BASED CREDIT SYSTEM

ADMITTED BATCH2019-2022

IIIEAR FBC SEMESTER-VI

YEAR	SEMESTER	PAPER	TITLE	No. of Hrs./ Week	No of credits	Evaluation		
						Internal	External	TOTAL
III	VI	Any One paper from VIA or VIB	Product development and quality evaluation	3	4	40	60	100
			Practical- VIA	2	2	15	35	50
			Food analysis and food manufacture	3	4	40	60	100
			Practical- VIB	2	2	15	35	50
		CLUSTERVI IA	II. Food biotechnology	3	4	40	60	100
			Practical-VII-I	2	2	15	35	50
			III. Food safety quality control	3	4	40	60	100
			Practical-VII-II	2	2	15	35	50
			I. Organization of Cell structure	3	4	40	60	100
			PROJECT	2	2	-	50	50
		CLUSTERVIIB						

GUIDELINES FOR ALLOTMENT OF EXTRA CREDITS

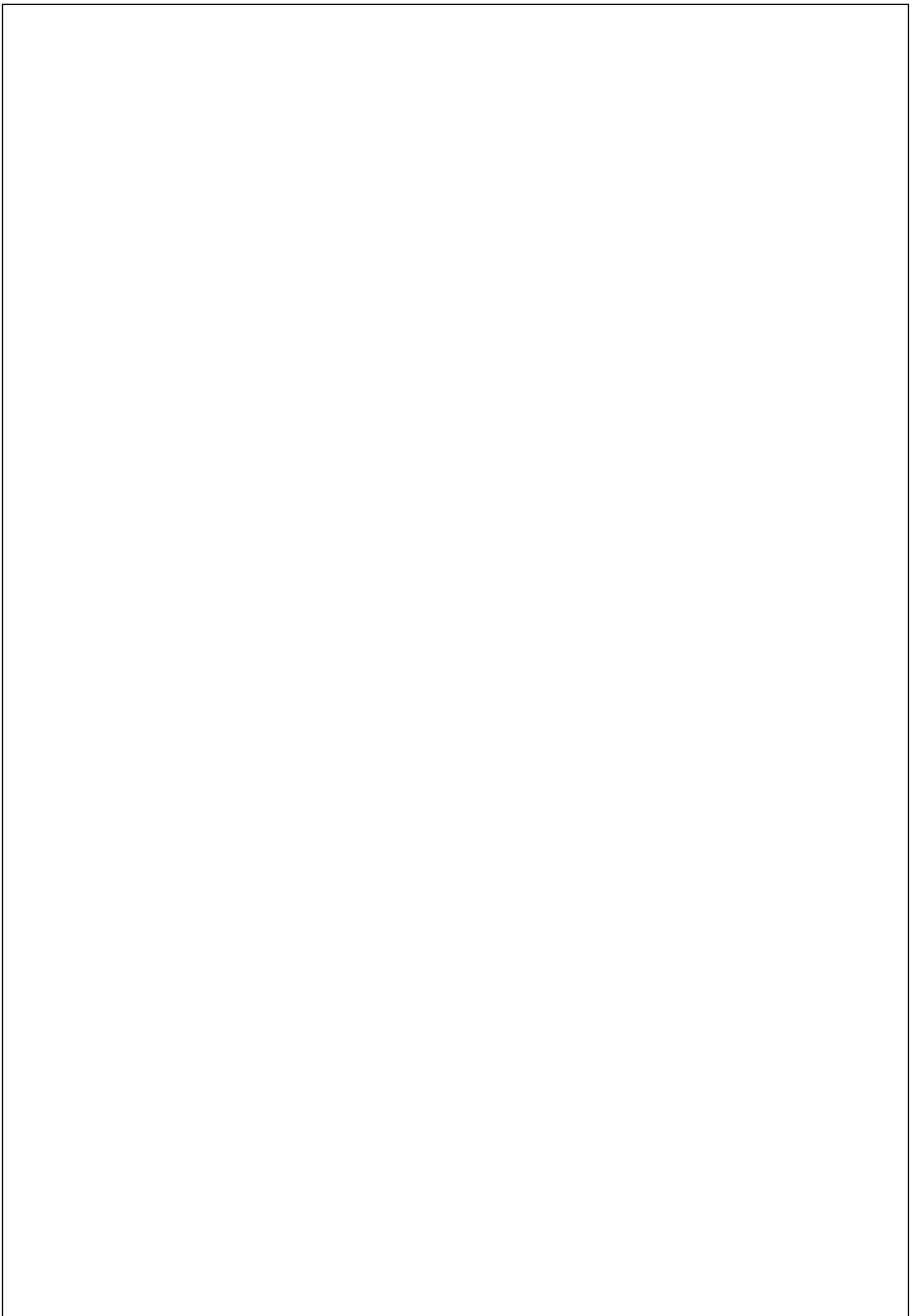
S.No.	Activity	Details of achievement	Credits
1	MOOC Course	SWAYAM /NPTEL /CEC etc., (Course Completion certificate with credits should be produced for the claim of extra credits)	Total credits achieved will be considered
2	NCC	B CERTIFICATE	2
		Participation in National Camp after 'B' certificate	3
		C certificate	4
		Adventure camp/RD parade along with 'B'	5
		Failed in B certificate Examination	1
3	Sports	Inter collegiate election	2
		South zone selection	3
		All India participation	4
		Winning medals in all India competitions	5
4	NSS	40% attendance in regular NSS activities	1
		50% attendance with Community Service	2
		Conduct of survey/ Youth exchange/RD	3
5	JKC	Enrollment and training	1
		Campus recruitment local level	2
		MNCs/reputed companies	3
6	Community service	Participation in community service by departments (outreach Programmes)	2
7	Cultural Activity	Winning medals at state level-2,	2
		District level-1	1
8	COP/Add on Course	Pass in Certificate Exam-1,	1
		Diploma-2	2
9	Support services	Lead India, Health club, RC and Eco Club etc., participation in various Programmes	1

Details of Online courses proposed for the year 2022 – 23

S.No	Name of Online Course	Conducted by	No. of credits
1	Food formulation by fortification (or) Nutrient fortification of foods	UGC	3
2	Food Chemistry	UGC	4
3	Functional foods and Nutraceuticals	UGC	3
4	Bakery and Confectionery	UGC	2
5	Public health nutrition	UGC	2


Details of projects proposed to be undertaken for the year 2022 - 23**Projects:**

1. Food Enrichment by formulation (Comparative study with commercialized product)
2. Food adulteration tests of various foods
3. Preparation of natural food colours
4. Nutritional survey of expectant mothers/infants/school children



GUIDELINES FOR ALLOTMENT OF EXTRA CREDITS

S.No.	Activity	Details of achievement	Credits
1	MOOC Course	SWAYAM /NPTEL /CEC etc., (Course Completion certificate with credits should be produced for the claim of extra credits)	Total credits achieved will be considered
2	NCC	B CERTIFICATE	2
		Participation in National Camp after 'B' certificate	3
		C certificate	4
		Adventure camp/RD parade along with 'B'	5
		Failed in B certificate Examination	1
3	Sports	Intercollegiate selection	2
		South zone selection	3
		All India participation	4
		Winning medals in all India competitions	5
4	NSS	40% attendance in regular NSS activities	1
		50% attendance with Community Service	2
		Conduct of survey/Youth exchange/RD	3
5	JKC	Enrollment and training	1
		Campus recruitment local level	2
		MNCs/reputed companies	3
6	Community service	Participation in community service by departments (outreach Programmes)	2
7	Cultural activity	Winning medals at state level-2, District level-1	2
			1
8	COP/Add on Course	Pass in Certificate Exam-1, Diploma-2	1
			2
9	Support services	Lead India, Health club, RC and Eco Club etc., participation in various Programmes	1

	P.R. GOVERNMENT COLLEGE(A), KAKINADA.	Program & Semester IBSC(FBC) FOOD SCIENCE (I Semester)			
Course Code	TITLE OF THE COURSE RAW AND PROCESSED COMMODITIES IN FOOD SCIENCE				
Teaching	Hours Allocated: 60 (Theory)	L	T	P	C
Pre-requisites	To understand the basic commodities both raw and processed in food groups	-	4	-	3

Course Objectives:

Upon completion of this course the student should be able to:

To structure composition and nutritive values of cereal products.

Processing of variety preparations effect of cooking of pulses products.

Classification, composition and different purpose of quality of food groups.

Course Outcomes:

On Completion of the course, the students will be able to

CO1	To know and learn building process and growth formation of food groups,
CO2	To learn about the classification and composition,
CO3	To learn about different type of fruits and vegetables nutritive values.
CO4	To learn about flavoring extract preparation of various food groups .

Course with focus on employability /entrepreneurship/ Skill Development modules

Skill Development		Employability		Entrepreneurship	
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P.R. GOVERNMENT COLLEGE (A), KAKINADA
CHOICE BASED CREDIT SYSTEM
FOOD SCIENCE SYLLABUS SEMESTER – I
PAPER-I RAW AND PROCESSED COMMODITIES IN
FOOD SCIENCE-I
ADMITTED BATCH 2022-2023 (COURSE CODE-BC1212)

Hrs:60

CREDITS-2

Syllabus:

Unit-I:

12hours

Cereal and cereal products: Structure of wheat and rice, composition and nutritive value uses in variety of preparations, milling of wheat, milling of rice and parboiled rice, products of cereals.

Pulses and legumes: Composition and nutritive value, processing of pulses, uses in variety of preparations, effect of cooking.

Unit-II:

12hours

Milk and milk products: Composition, quality, uses nutritional aspects. Products: processed milk, curd, buttermilk, paneer, cheese and ice cream.

Egg: Production, nutritive value, structure, composition, evaluation of egg quality, grading effect of heat on egg proteins.

Unit III:

12hours

Fish, meat and Poultry: Classification, composition and nutritive values, changes during cooking

Vegetables and fruits: Vegetables- Classification, composition, nutritive value, cole crops –

Cabbage, cauliflower, root vegetables, leafy vegetables. Fruits: composition, classification, tropical and subtropical fruits- amla, avocado, banana, dates, guava, jackfruit, jambu fruit, mango, papaya, passion fruit, pineapple, pomegranate, sapota dry fruits, fruit products – jams, gels, marmalade

Unit-IV

12hours

Sugars and Sugar products: Nutritive value, khandasari sugar, raw sugar, boiled sugar, sugar related products, liquid sweetness, and sugar boiled confectionary.

UNIT-V:

12 hours

Spices and condiments: Classification, flavoring extracts, major spices of India and its uses (pepper, cardamom, ginger, chillies, coriander, cumin, cinnamon, fenugreek, garlic, mace and nutmeg, mustard, saffron, cloves, asafetida and uses. Flavor constituents of spices.

Tea and coffee: Classification, composition, preparation of tea products. Coffee making, Soluble coffee

Textbooks:

GENERAL FOOD SCIENCE

1. The science of good cooking-john burgonye.
2. The food science nutritional aspects of BVV Sri Lakshmi.
3. Foods scientifically –Rubin Michael
4. Food science good cooking-J kenji
5. Food science eat of good Mark Hyman.
6. Food science basics of Michal Pollan.

Referencebooks:

I

Food science textbook B.V.V.Sri Lakshmi 4th edition.

CO-POMapping:

(1:Slight[Low]; 2:Moderate [Medium]; 3:Substantial [High], '-':No Correlation)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1	2	3	2	3	3	3	1	2	2	3	2	3	3
CO2	3	2	3	3	2	3	3	1	3	3	2	3	2
CO3	3	3	3	3	2	2	2	2	2	3	3	3	2
CO4	3	2	2	2	2	2	3	3	1	1	3	3	3

P.R. GOVERNMENT COLLEGE (A),KAKINADA

FIRSTYEAR

PAPER-I FOOD SCIENCE-I

ADMITTED BATCH2022-2023

BLUEPRINT FOR QUESTION PAPER SETTER

Time:2.30 hours

Maxmarks:50

MODULENO.	ESSAY QUESTIONS 10MARKS	SHORT ANSWER QUESTIONS 5MARKS	MARKS ALLOTD TOTHE UNIT	As per blooms taxonomy
UNIT-I	01	01	20	Evaluating Understanding
UNIT-II	01	02	20	Analyzing
UNIT-III	01	02	15	Understanding
UNIT-IV	02	01	25	Remembering Applying
UNIT-V	01	01	15	Evaluating Understanding
Total no of questions	06	07	95	

NOTE: The question paper setters are requested to kindly adhere to the format given in the above table

P.R. GOVERNMENT COLLEGE(A), KAKINADA
B.sc (FOOD SCIENCE) FIRST YEAR I SEMESTER

Time 2hrs

Max.Marks-50

Note: Answer any THREE questions choosing atleast one question from each Section

3x10= 30M

SECTION-A

1. Describe the uses of rice and wheat in verity preparations .write there nutritisitional values.
2. Write the composition and nutritional aspects of milk.
3. Describe the structure and preparation of nutritive value of egg.

SECTION-B

4. Classify various types of vegetables giving examples and mention the nutrient values.
5. Describe the role of sugar and sugar products input.
6. Explain uses of major spices of India.

PART-II

Answer any **Four** questions (Short answer questions)

4x5=20Marks

7. Write a note of nutritional aspects of pulses.
8. How do you evaluate the quality of egg.
9. Write a brief note on poultry.
10. Give the importance of fruit in food for maintance of health.
11. Write about sugar boil confectionary.
12. Write composition of tea and coffee.

P.R.GOVERNMENTCOLLEGE(A),KAKINADA

B.SC(FOOD SCIENCE)

FIRSTYEARISEMESTER

FOOD SCIENCE – SYLLABUS

(Raw and processed commodities in Food Science

QUESTIONBANK

(Essayquestions10marks)

EASYQUESTIONS (10Marks)

Unit-I

1. Describe the uses of rice and nutritive values .
2. Explain the wheat structure composition of wheat.
3. Write about variety preparations of pulses.

Unit-II

4. Write a account on various products of milk.
5. Write the nutritive value of egg'
6. Write the composition of milk .
7. Grading effect of heat on egg protein.
8. Explain the processed curd.

Unit-III

9. Classification composition of vegetables.
10. Changes during and nutritive values of vegetables.
11. Explain the tropical fruits classification .

Unit-IV

12. Nutritive values of boiled sugars.
13. Classification flavouring extract of spices.

Unit-V:

14. Classification preparation of tea products.
15. Explain the coffee making and soluble coffee.

SHORT ANSWER QUESTIONS(5Marks)

Unit-I

- 1.milling of wheat
- 2.par boiled rice
- 3.Products of cereals.
- 4.Effect of cooking

Unit-II

- 5.composition quality of milk.
- 6.processed paneer.
- .7.preparation of ice cream.
- 8.egg protein
- 9.evaluation of egg

Unit-III

10. Composition of vegetables .
 11. Hole cropes
nutritive values
 12. Passhnon fruit
nutritive value
 - 13.fruit products
- IV UNIT

15. Titration curve of Glycine.
16. Essential amino acids and Non-essential amino acids
- 17.Naturally occurring peptides

Unit-V

18. Denaturation
- 19.Hemoglobin



P.R.GOVERNMENTCOLLEGE(A),KAKINADA

Program &Semester

IB.sc Food science
(I Semester)

Course
Code

TITLE OF THE COURSE
RAW AND PROCESSED
COMMODITIES IN FOOD
SCIENCE-I PRACTICAL

Teachi
ng

Hours Allocated:30(**Practical**)

L

T

P

C

Pre-
requisites

To learn the qualitative analysis of FOOD SCIENCE

2

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2

List of Experiments:

1. Cooking methods and cereal cookery
2. Gelatinization
3. Pulse cookery
4. Sugar cookery
5. Vegetable cookery
6. milk cookery
7. Fruit salad and beverages
8. oil seed cookery



	P.R.GOVERNMENTCOLL EGE(A),KAKINADA	Program&Semester IB.SC(FBC) FOOD SCIENCE (II Semester)			
CourseCode BC2212	TITLEOFTHECOURSE FOOD BIO-CHEMISTRY				
Teaching	HoursAllocated:60(Theory)	L	T	P	C
Pre-requisites	To know a nucleotide structure and porphyrins To learn the different biochemical techniques	-	4	-	3

Course Objective

Upon completion of this course the student should be able to:

- 1.Acquire knowledge on the macro and micro constituents of the food.
- 2.Know the structure and chemical and bio-logical characteristics of constituents of food

Course Outcomes:

On Completion of the course, the students will be able to	
CO1	To learn classification with example important properties of carbohydrates.
CO2	Structure with example and the solubility proteins.
CO3	Classification composition fatty acids.
CO4	Vitamins and minarals defeciancy deseases and functions.

Coursewithfocusonemployability/entrepreneurship/SkillDevelopmentmodules

Skill Development		Employability		Entrepreneurship	
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Syllabus:

**P.R.GOVERNMENT COLLEGE(A),KAKINADA
CHOICE BASED CREDIT SYSTEM
FOOD SCIENCE SYLLABUS PAPER-II
NUCLEIC ACIDS AND BIOCHEMICAL TECHNIQUES
ADMITTED BATCH 2022-2023**

Unit-I:

Module – I CARBOHYDRATES

Classification with examples, nomenclature briefly, study of important properties of Glucose, Fructose, Sucrose, Lactose & Galactose – sources, functions, deficiency, and toxicity. Industrial laboratory preparation of glucose and fructose. Inversion of sucrose. Structure of starch, cellulose, glycogen, pectin. Gelatinization of starch

Module – II PROTEINS

Amino acids, peptides and proteins classification of amino acids, structure, zwitter ion, isoelectric point, amphoteric property. Peptide bond, naming of peptide chain, biological roles. Classification of proteins according to shape, composition and solubility structure with examples. Chemical bonds involved in protein structure. General properties of proteins, sources, biological functions, deficiency and toxicity. Estimation of protein by paper electrophoresis and paper chromatography.

Module – III LIPIDS

Definition, classification with examples, composition, fatty acids; saturated and unsaturated & essential fatty acids, flavor changes in fats and oils, hydrolytic and oxidative rancidity; mechanism of auto oxidation of fat; reversion, antioxidants – natural and synthetic, technology of edible fats and oils – hardening of fat, hydrogenation and inter-esterification, structure – phospholipids, glycolipids, sphingolipids, cholesterol. Emulsion and emulsifiers.

Module – IV

VITAMINS, MINERALS AND WATER

Vitamins – Fat soluble – A, D, E, K; Water soluble – thiamine, riboflavin, niacin, B12, pyridoxine, Vitamin – C: sources, functions, deficiency diseases and hypervitaminosis.

Module-V Minerals

Minerals – Ca, Fe, K, Na, P, I, F – sources, functions, deficiency diseases and excess. (Absorption of calcium and Iron)

Water – Sources, functions, deficiency diseases

Textbooks

General Biochemistry

1. Benjman K.simpson food biochemistr
2. Biochemistry of foods N.A.Eskin,feredion
3. Clinical biochemisteryt,v..vsatyanarayana.
4. Food biochemistryM.L.Nollet

CO-PO Mapping:

(1:Slight[Low]; 2:Moderate [Medium]; 3:Substantial [High], '-':No Correlation)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1	2	3	2	3	3	3	1	2	2	3	2	3	3
CO2	3	2	3	3	2	3	3	1	3	3	2	3	2
CO3	3	3	3	3	2	2	2	2	2	3	3	3	2
CO4	3	2	2	2	2	2	3	3	1	1	3	3	3

P.R. GOVERNMENT COLLEGE(A),KAKINADA

B.sc(FOOD SCIENCE) FIRSTYEAR

I SEMESTER

**Weightage to content
Course–2FOODBIOCHEMISTRY**

Time:2.30 hours

Maxmarks:50M

MODULENO.	ESSAYQUESTIONS10MARKS	SHORTANSWERQUESTION55MARKS	MARKSALLOTTEDTO THEUNIT	QUESTIONS RELATED AS PER BLOOMS TAXONOMY
UNIT– I	02	01	25	Analyzing understanding
UNIT–II	01	01	15	Skill evaluating
UNIT–III	01	02	20	Analyzing applying
UNIT-IV	01	02	20	Remembering applying
UNIT-V	01	01	15	Analyzing understanding
Total no. of Questions	06	07	95	

NOTE: The question paper setters are requested to kindly adhere to the format given in the above table.

P.R. GOVERNMENT COLLEGE(A),KAKINADA

B.SC (FOOD SCIENCE) FIRST YEAR I

SEMESTER Course– FOOD BIO-CHEMISTRY

Model Question Paper

Time2hrs.

Max.Marks-50M

Note: Answer any THREE questions choosing at least one question from each Section.3x10=30M

SECTION-A

1. Write the important properties of glucose and fructose.
2. Write about the structure of any three poly saccharides.
3. What are the amino acid give the classification of amino acids?

SECTION-B

4. Write a note on structure of protein.
5. Explain the structure of phospho lipids and glycolipids.
6. Write a brief note on fat soluble vitamins.

PART-II

Answer any Four Questions.

4x5= 20M

1. Write the source of glucose.
2. Write a note on sugar.
3. Write a about flavor changes in fat in oil.
4. Write a note on zwitter ion.
5. What is oxidative rancidity.
6. Write a source of water soluble vitamins.

P.R. GOVERNMENT COLLEGE(A),KAKINADA

B.SC(FOOD SCIENCE)FIRSTYEAR

ISEMESTER

Course-2:FOOD BIO-CHEMISTRY

QUESTION BANK

EASY QUESTIONS (10Marks)

Unit-I

1. Write the classification of carbohydrates with examples.
2. Write the important properties of sucrose and lactose.
3. Write about the industrial laboratory preparation of glucose and fructose.
4. Write about the structure of any three polysaccharides.

Unit-II

5. Write a note on classification of protein based on shape and solubility.
6. Write about the structure and properties of amino acids.

Unit-III

11. Explain the composition with example fatty acids .
12. Explain the essential fatty acids.
13. Write the esterification and hydrogenation.

Unit-IV

14. Mention about water soluble vitamins .
15. Write a brief note on fat soluble vitamin .

Unit-V

16. Discuss the diseases sources ,functions of calcium and phosphorus.
17. Discuss the source ,functions and deficiency disease
18. Write about thiamine and riboflavin and niacin.

SHORT ANSWER QUESTIONS(5Marks)

Unit-I

1. Nomenclature .
2. Fructose.
3. Lactose.
4. Glycogen.

Unit-II

5. Paper chromatography.
6. Peptide bond

Unit-III

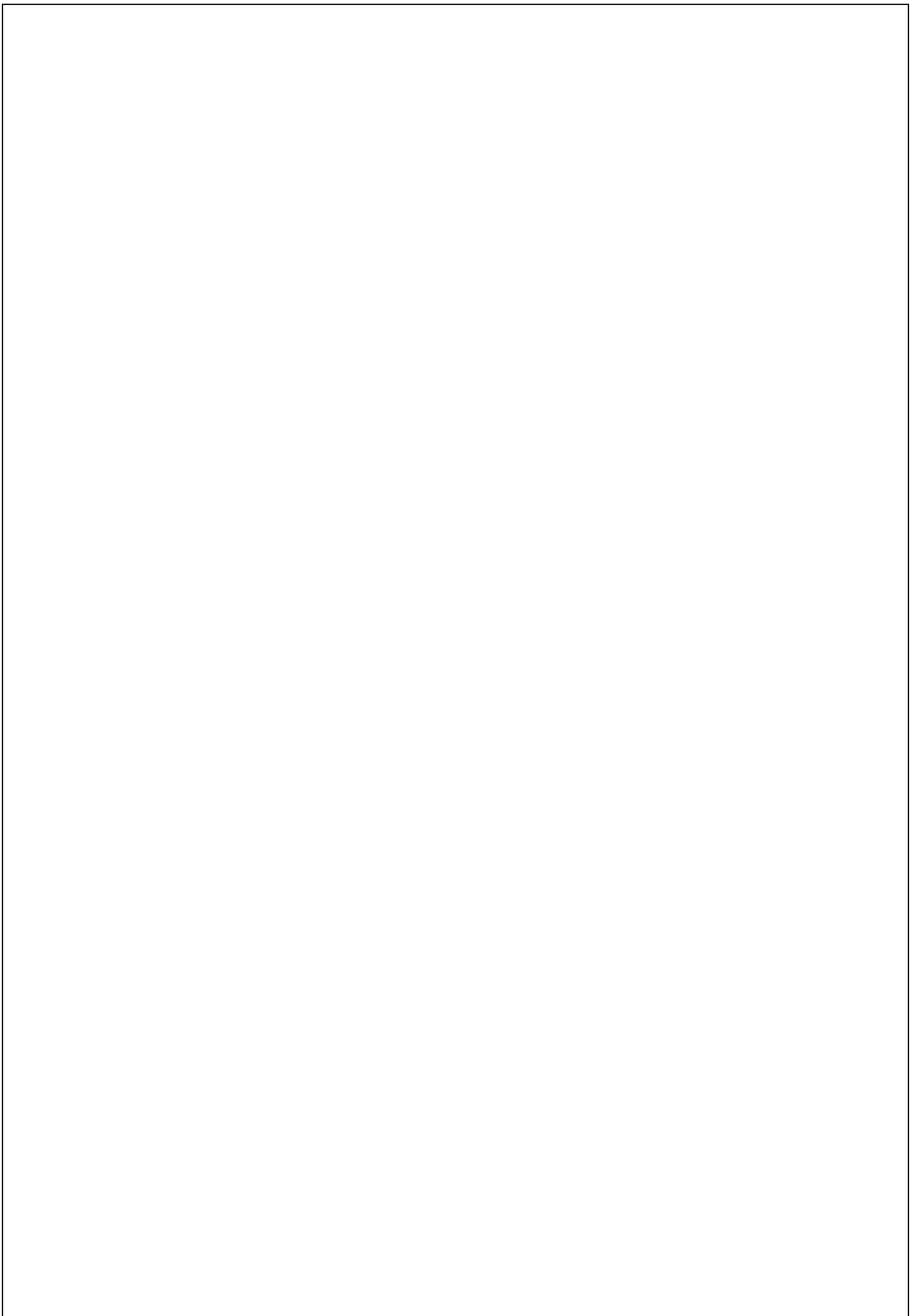
7. lipids.
8. saturated and unsaturated fatty acids.
9. cholesterol.
10. emulsifiers


UNIT-IV

7. B12
8. Vit C sources
9. Pyridoxine

UNIT-V

12. Water sources
13. Calcium functions.
14. Iron sources




	P.R. GOVERNMENT COLLEGE(A), KAKINADA	Program&Semester IB.sc(FBC) FOOD SCIENCE (II Semester)			
CourseCode	TITLE OF THE COURSE FOOD BIOCHEMISTRY PRACTICAL				
Teaching	Hours Allocated: 30(Practical)	L	T	P	C
Pre-requisites	QUALITATIVE IDENTIFICATIONS OF CHO'S AND PROTEINS	2	-	-	2

Practicals:

Hrs:2

List of Experiments:

1. Qualitative test for carbohydrates
2. Qualitative tests for protein
3. Moisture assay by oven drying method
4. Estimation of starch
5. Estimation of crude fiber

	P.R. GOVERNMENT COLLEGE(A), KAKINADA.	Program & Semester IB.SC., FOOD SCIENCE (III Semester)			
Course	TITLE OF THE COURSE HUMAN PHYSIOLOGY				
Teaching	Hours Allocated: 60 (Theory)	L	T	P	C
Pre-requisites	To UNDERSTAND THE RELATIONSHIP BEING NUTRITION AND HUMAN WELLBEING	-	4	-	3

Course Objectives:

To make the student

1. To enable the students to understand the necessity of energy and its production in the body.
2. To understand the relationship between nutrition and human well being

On Completion of the course, the students will be able to	
CO1	To enable the students to understand the necessity of energy and its production in the body
CO2	To understand the relationship between nutrition and human well being

Course with focus on employability /entrepreneurship /Skill Development modules

Skill Development		Employability		Entrepreneurship	
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P.R.GOV.T. COLLEGE (A), KAKINADA

CHOICE BASED CREDIT SYSTEM

FOOD SCIENCE SYLLABUS (HUMAN PHYSIOLOGY)

SEMESTER – III (PAPER-III)

ADMITTED BATCH 2020-2021

CREDITS :4

OBJECTIVES:

To enable the students to understand the necessity of energy and its production in the body. To understand the relationship between nutrition and human wellbeing.

Module – I

Sence organs – structure and function of eye, ear, nose, tongue and skin

Sensation of smell; olfactory receptors olfactory sensation adaptations

Sensation of taste; teste bud's situation structure different taste sensation

Module – II

Digestive system: Structure of digestive track, digestion and absorption or carbohydrates, fats and protein. Role of liver, pancreas and gall bladder. Regulation of food intake – role of hunger and satiety centres, effect of nutrients.

Nervous system: Review of structure and function of neuron – conduction of nerve impulse, synapses, role in variousbody functions-obesity, sleep, memory.

Module – III

Blood: Composition and functions of blood, plasma proteins, Hemoglobin, hematopoiesis, coagulation of blood, blood groups,

Heart: Structure and function of heart and blood vessels – Regulation of cardiac output and blood pressure, heart failure, hypertension.

Module – IV

Excretory system: structure and function of kidney, nephron – Urine formation – Role of kidney in maintaining pHof blood – water, electrolyte and acid base balance – diuretics, renal function tests – properties and composition of normal urine, renal function tests – by examination of urine, blood, blood and urine, re

P.R.G

CO-PO Mapping:

(1:Sligh ht[Low]; 2:Moderate [Medium]; 3:Substantial [High], '-':No Correlation)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1	2	3	2	3	3	3	1	2	2	3	2	3	3
CO2	3	2	3	3	2	3	3	1	3	3	2	3	2
CO3	3	3	3	3	2	2	2	2	2	3	3	3	2
CO4	3	2	2	2	2	2	3	3	1	1	3	3	3

P.R.G

P.R. GOVERNMENT COLLEGE(A), KAKINADA

B.SC(FBC) FOOD SCIENCE

SECONDYEAR SEMESTER-III

COURSE-3 : HUMAN PHYSIOLOGY

WEIGHTAGE TO CONTENT

Time:2hours

Maxmarks:50

MODULENO.	ESSAY QUESTIONS 10MARKS	SHORTANSWE RQUESTIONS5 MARKS	MARKSAL LOTEOTO THEUNIT	AS PER BOOLMS TAXONOMY
UNIT- I	01	01	40	Analyzing understanding
UNIT-II	02	02	20	applying
UNIT-III	02	02	15	remembering
UNIT-IV	01	02	20	understanding
Total no.of Questions	06	07	95	

NOTE: The question paper setters are requested to kindly adhere to the format given in the above table.

P.R. GOVERNMENT COLLEGE (A), KAKINADA

B.SC (FBC) FOOD SCIENCE SECOND YEAR

III SEMESTER

Course--: HUMAN PHYSIOLOGY

Model Question Paper

Time:2hrs.

Marks:50M

PART-I

Answer any **THREE** questions choosing at least ONE question from each section. 10x3=30M

SECTION – A

1. Write the mechanism of stimulation of taste receptors?
2. Explain biological functions, deficiency and excess of proteins.
3. Describe the conduction of nerve impulse and synapses.

SECTION -B

4. Explain composition of blood?
5. Write the mechanism of urine formation?
6. Describe the role of kidneys in maintaining acid-base balance.

PART – II

Answer any FOUR questions. (Short answer questions)

4x5=20M

7. Write about Olfactory receptors and pathway?
8. Write the structure of tongue?
9. Explain about digestion of proteins?
10. Write the structure of digestive track?
11. Write the functions of blood?
12. Write the coagulation of blood?
13. Write the functions of kidneys?

PART – III

Answer any FIVE questions. (Very short answer questions)

5x2=10M

14. Write the classification of odor?
15. What are taste buds?
16. Write about taste sensation?
17. Absorption of fats
18. What are bolus?
19. What is obesity?

PR GOVERNMENT COLLEGE

III-SEMESTER IIB.SC(FBC)

PAPER -: HUMAN PHYSIOLOGY

Essay Questions (10M)

1. Write the mechanism and stimulation of taste receptors?
2. Describe the situation, structure, taste pathway of taste
3. Write about the abnormalities of olfactory sensation?

Module - II

1. Describe the conduction of nerve impulse and synapse?
2. Describe the structure of digestive system with labeled diagram?
3. Write about the digestion and absorption of carbohydrates?
4. Write about the digestion and absorption of proteins?
5. Write about the digestion and absorption of fats?

Module - III

1. Explain the composition of blood?
2. Write about the structure and function of heart?
3. Write about the regulation of cardiac output?

Module – IV

1. Write the mechanism of urine formation?
2. Describe the role of kidneys in maintaining acid-base balance?
3. Write about renal function tests?

Short Answer Questions (5M)

Module - I

1. Write about olfactory receptors and pathway?
2. Write the structure of tongue?
3. Write about the abnormalities of taste sensation?
4. Describe the threshold for olfactory sensation?

Module - II


1. Write about the structure of digestive track?
2. Describe the role of liver in digestion?
3. Write a note on regulation of food intake?
4. Describe the structure of neuron?

Module - III

1. Write the functions of blood?
2. Write about coagulation of blood?
3. Write about different blood groups?
4. Write about Erythroblastosis Foetalis?
5. Write about regulation of blood pressure?

Module - IV

1. Write about structure of kidney?
2. Write about structure and function of nephron?
3. Write a note on composition of urine?
4. What are types of nephrolithiasis?
5. Write a note on renal disorders?

	P.R. GOVERNMENT COLLEGE(A), KAKINADA	Program&Semester IIB.sc(FBC) FOOD SCIENCE (III Semester)			
CourseCode	TITLE OF THE COURSE HUMAN PHYSIOLOGY PRACTICAL				
Teaching	Hours Allocated: 30(Practical)	L	T	P	C
Pre-requisites	QUALITATIVE IDENTIFICATIONS OF CHO'S AND PROTEINS	2	-	-	2

Practicals:

List of Experiments:

- 1.sensory evaluation
2. determination of ABO blood grouping and Rh typing.
- 3.urine test.
4. estimation of heamoglobin
5. total count of RBC WBC

Hrs:2

TEST BOOKS: Human physiology for by Ranganath

II) A text book of human

I) Human physiology for by Ranganath

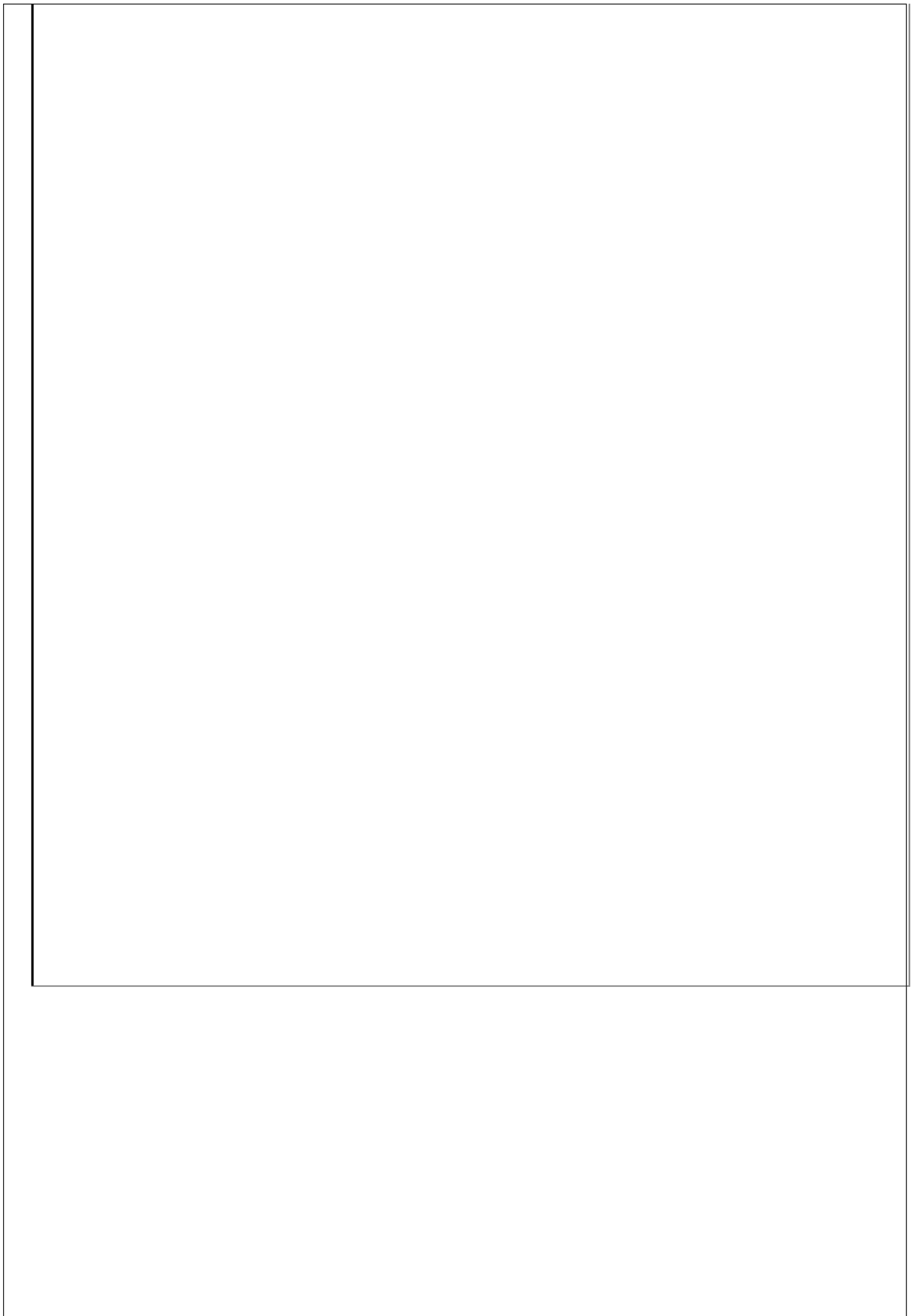
II) A text book of huma

physiology H.S. Ravikumar patil

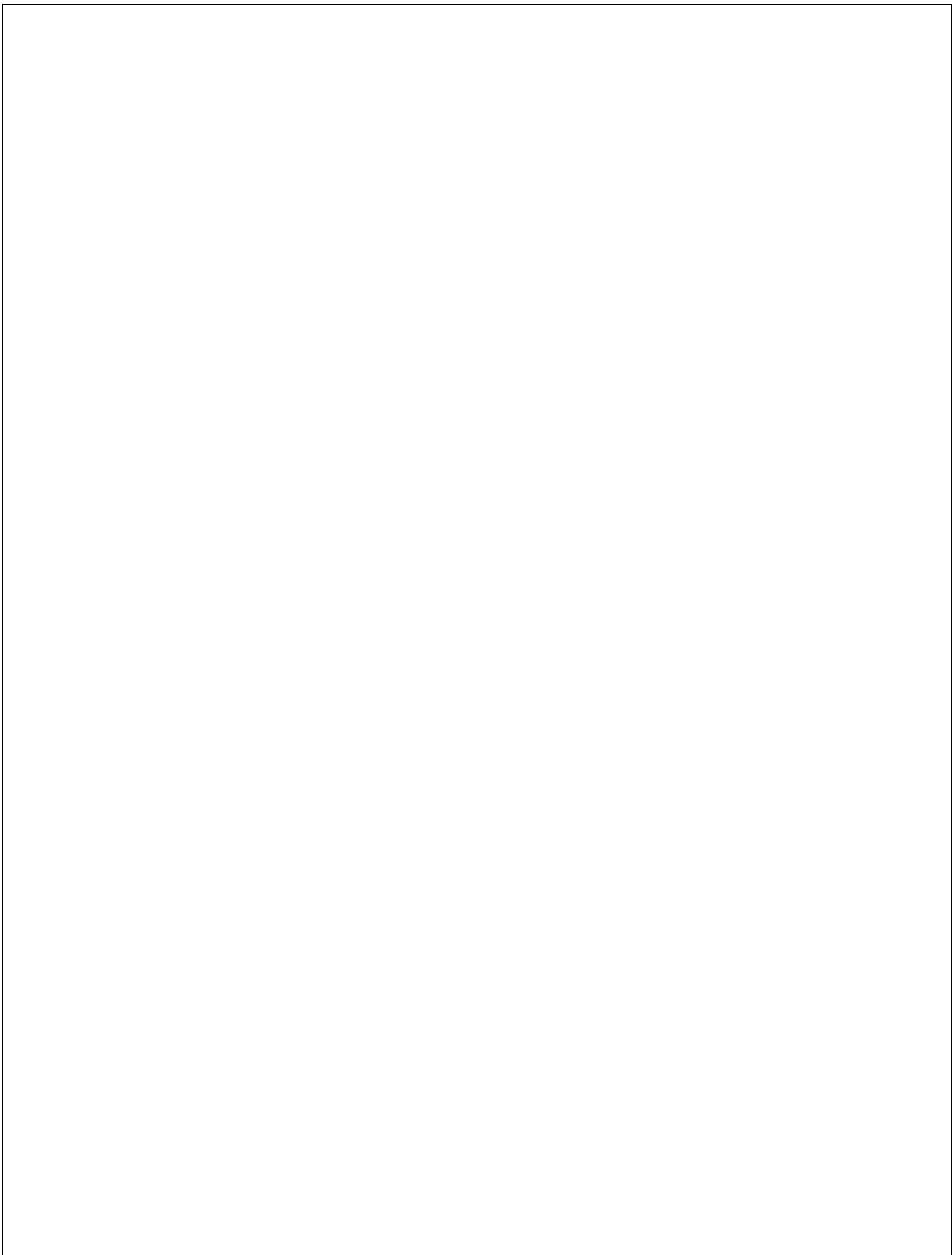
III) Human physiology for BDS Dr. A. JAIN


IV) Review of physiology Souman manna

V) Anatomy & physiology Ross & WILSON







	P.R.GOVERNMENTCOLLEGE(A),KAKINADA	Program &Semester IIB.SC, FOOD SCIENCE (IV Semester)			
CourseCode	TITLEOFTHECOURSE FOOD MICROBIOLOGY				
Teaching	HoursAllocated:60(Theory)	L	T	P	C
Pre-requisites	TO UNDRE STAND THE MICRO ORGANISMS OF FOOD, FOOD BORN DISEASES	-	4	-	3

Course Objectives:

After the successful completion of this course, the student shall be able to:

1. To help the students to acquire an elementary knowledge about microorganisms, develop an understanding of industry and in maintenance of health
2. To acquire knowledge about the adulterants of food, food born diseases and health hazards.

1.

OnCompletionofthecourse,thestudentswillbeableto	
CO1	This course help the students to acquire an elementary knowledge about microorganisms
CO2	1. To develop an understanding of industry and in maintenance of health
CO3	1. To acquire knowledge about the adulterants of food, food born diseases and health hazards.

SkillDevelopment		Employability		Entrepreneurship	
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**P.R.GOVERNMENT COLLEGE(A),
KAKINADA
CHOICE BASED CREDIT SYSTEM
SYLLABUS IV SEOOD SCIENCE MESTER PAPER-IV
FOOD MICROBIOLOGY
ADMITTED BATCH 2022-2023**

COURSECODE-BC4212

Hrs :

CREDITS-2

INSTRUCTIONAL OBJECTIVES:

- 1. This course aims at the biological energy transformations**
- 2. This also imparts knowledge about metabolism of carbohydrates fatty acids amino acids, nucleic acids and Inborn errors.**

Module – I

Basic concepts of microbiology: Introduction to microbiology. Microbiology in daily life. Classification of prokaryotic and eukaryotic microorganisms. Characteristics and morphology of bacteria, fungi, virus, protozoa.

Module – II

Control of microorganisms: Bacterial growth curve and kinetics of growth, effect of i) P ii) Water activity iii) O₂ availability iv) temperature on the growth of microorganisms. Indicator Microorganisms: sources, method of detection, growth and survival of a) coliform b) fecal streptococci c) Enterobacteriaceae, Micro-organisms importance in food – factors affecting the growth of micro organisms in food – Intrinsic and Extrinsic parameters that affect microbial growth.

Module – III

Cultures & Media: Methods of sterilization. Types of media. Preparation of culture media, isolation and cultivation of microorganisms, methods of preservation of microbes, gram staining.

Module – IV

Food spoilage : Contamination and spoilage of different foods, spoilage of different groups of foods: Cereal and cereal products, vegetables and fruits, meat and meat products, eggs and poultry, fish and other sea foods, milk and milk products, canned food. Food poisoning, food infection

CO-POMapping:

(1:Slight[Low]; 2:Moderate [Medium]; 3:Substantial [High], '-':No Correlation)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1	2	3	2	3	3	3	1	2	2	3	2	3	3
CO2	3	2	3	3	2	3	3	1	3	3	2	3	2
CO3	3	3	3	3	2	2	2	2	2	3	3	3	2
CO4	3	2	2	2	2	2	3	3	1	1	3	3	3

P.R.GOVERNMENTCOLLEGE(A),KAKINADA

B.SC(FBC)FOODSCIENCE

SECOND YEAR SEMESTER-IV

COURSE-FOOD MICROBIOLOGY

WEIGHTAGETOCCONTENT

BLUEPRINTFORQUESTIONPAPERS TTER

Time:2hours

Maxmarks:5

MODULENO.	ESSAY QUESTIONS 10MARKS	SHORT ANSWER QUESTIONS5 MARKS	MARKS ALLOTTEDTO THEUNIT	AS PER BLOOMS TAXONONY	
UNIT-I	01	02	25	Evaluating	
UNIT-II	02	02	20	analyzing	
UNIT-III	02	01	30	Evaluating analyzing	
UNIT-IV	01	02	20	Understanding and remembering	
Totalno.ofQuestions	06	07	95		

NOTE:The questionpapers etters are requested to kindlyadheretotheformat givenintheabove table.

P.R.GOVERNMENT COLLEGE(A),KAKINADA

B.SC(FBC)

FOOD SCIENCE

SECONDYEAR IV SEMESTER

Course-FOOD MICRO BIOLOGY

Model Question Paper

. Time 2hrs

Max.Marks-50M

PART-1

Note: Answer any THREE questions choosing at least one question from each Section.

SECTION-A

1. Write about growth curve and explain the phases of growth curve? 10X3=30
2. What are the Intrinsic and extrinsic parameters of microbial growth?
3. What are the different types of culture media?
4. Write the contamination and microbial spoilage of vegetables?
5. Write the How bacteria are classified on the basis of morphology?
6. contamination and microbial spoilage of milk and milk products?

PART – II

Answer any FOUR questions. (Short answer questions)

Marks : 4x5=20M

7. Write the morphology of TMV?
8. Briefly describe the structure of bacterial cell?
9. Write the effect of ph. and temperature on growth?
10. Write about fecal streptococci?
11. Write about culture techniques?
12. Write the methods of isolation of micro organisms?
13. Write the contamination and spoilage of fish?

.TEXTBOOKS:

I)Food microbiology dharmash kumar

II)Text book on food microbiologyP.F.Steffi IPage

III)Text book on food microbiologyA.Gurdev IPage|32

P.R.GOVERNMENT COLLEGE(A),KAKINADA

B.SC(FBC) FOOD SCIENCE

SECOND YEAR IV SEMESTER Course-

FOOD MICRO BIOLOGY

Question bank

ESSAY QUESTIONS(10 MARKS)

Essay Questions (10M)

Module - I

1. How bacteria are classified on the bases of morphology?
2. Discuss the classification of prokaryotic and eukaryotic microorganisms.
3. Discuss the role of microbiology in daily life with reference to foods?
4. Write a note on classification of eukaryotic microorganisms?

Module - II

1. Write about growth curve and explain the phases of growth curve?
2. Discuss the factors affecting the growth of microorganisms in food?
3. What is bacterial growth curve and write about the factors effecting the growth curve?
4. What are intrinsic and extrinsic parameters of microbial growth?

Module - III

1. What are different types of culture media?
2. Explain the preparation of different culture media?
3. Write a note on different methods of sterilization?

Module - IV

1. Write a note on contamination and microbial spoilage of vegetables?
2. Write a note on contamination and microbial spoilage of milk and milk products?
3. Describe the spoilage of meat and meat products?
4. What is the role of mycotoxins in causing food poisoning?

Short Answer Questions (5M)

Module - I

1. Explain the morphology of fungi
2. Explain the morphology of virus
3. What are characteristics of protozoa?
4. What are characteristics of bacteria?

Module - II

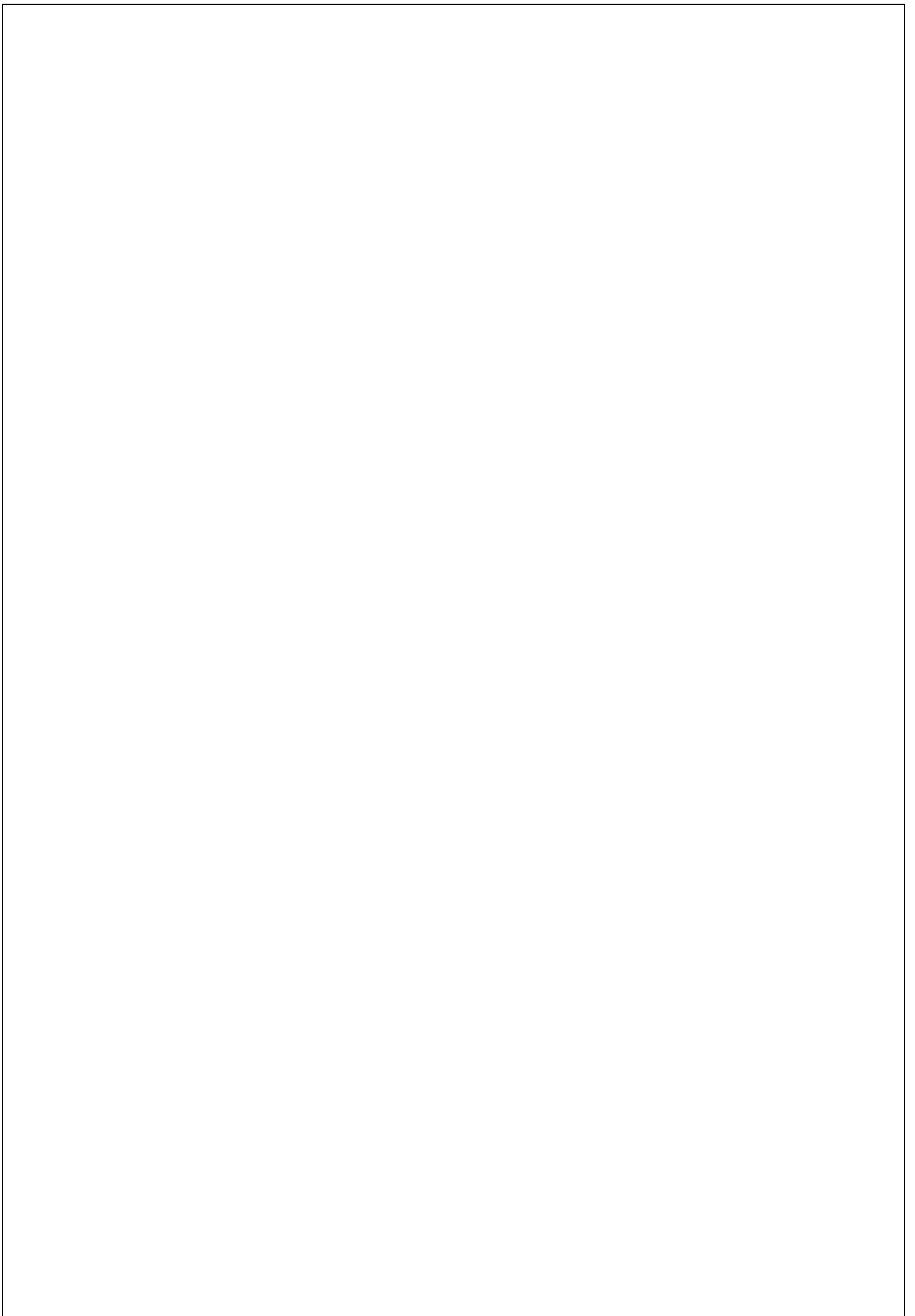
1. What is the effect of pH on bacterial growth curve?
2. Write a note on coliform bacteria.
3. What are the sources and methods of detection of fecal streptococci?
4. What is the effect of temperature on bacterial growth curve?
5. Write about kinetics of growth curve?


Module - III

1. Write a note on isolation and cultivation of microorganisms?
2. Write a note on gram staining?
3. Write a note on preparation of culture media.
4. Explain any two methods of sterilization?

Module - IV

1. Write a note on food poisoning?
2. Write a note on spoilage of fruits?
3. Write a note on spoilage of poultry?
4. Write a note on spoilage of fish?



	P.R.GOVERNMENT COLLEGE(A),KAKINADA	Program &Semester IIB.SC9FBC)BIO CHEMISTRY PAPER-IV (IV Semester)			
CourseCode 4212P	TITLE OF THE COURSE FOOD MICRO BIOLOGY PRACTICAL				
Teaching	Hours Allocated: 30(Practical)	L	T	P	C
Pre-requisites	TO INDRODUCTION OF MICROSCOPIC AND DIFFERENT STAININGS	2	-	-	2

COURSE CODE–BC4212P

Hrs:2


CREDITS-1

List of Experiments:

1. Study of compound microscope
2. Working and handling of common microbiological laboratory equipments and materials; preparation of microscopic examination.
3. gram stainings
4. Microscopic examination of living organisms – Hanging Drop Mount method for the demonstration of bacterial motility
5. Negative staining of bacteria
6. Composition, preparation and sterilization of media nutrient agar, potato dextrose agar, Mc Conkey agar, EMB agar.
7. Isolation, enumeration and characteristics of microorganisms.

Recommended Books for Food microbiology

8. DR.ARUMANGAM–Nelson.D.L.andCox.M.M.,Freeman&Co.
9. Bi–Berg.J.M.,Tymoczko.J.L.andStryer.L.,Freeman&Co.
10. Microbiology–Voet.DandVoet.,J.G.,JohnWiley&Sons
-Lippincott's Illustrated Reviews. Champe, P.C. and Harvey, R.A. Lippincott
11. Fundamental microbiology–Jain,J.L.,Jain,S.,Jain,N.S.Chand&Co.
12. microbiology–Satyanarayana.UandChakrapani.U,Books&AlliedPvt.Ltd.
13. microbiology–Rama Rao. A and Ratna Kumari. D, Kalyani Publishers. Harpers

	P.R.GOVERNMENT COLLEGE(A),KAKINADA	Program&Semester IIB.SC FOOD SCIENCE PAPER-V (IV Semester)			
CourseCode	TITLE OF THE COURSE HUMAN NUTRITION				
Teaching	Hours Allocated: 60(Theory)	L	T	P	C
Pre-requisites	TO LEARN ABOUT THE PHYSIOLOGY AND NUTRITION CONCEPT AND KNOW ABOUT THE IMMUNE SYSTEM	-	4	-	3



Course Objectives:

After the successful completion of this course, the student will be able to

1. To help the students to acquire an elementary knowledge about Food processing of different foods.
2. To acquire knowledge about the preservation of foods and different techniques of preservation.

On Completion of the course, the students will be able to	
CO1	3. To help the students to acquire an elementary knowledge about Food processing of different foods.
CO2	To acquire knowledge about the preservation of foods and different techniques of preservation

Course with focus on employability/entrepreneurship/Skill Development modules

Skill Development		Employability		Entrepreneurship	
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TEXT BOOKS :Human nutritionAnjana agarwal

Human nutrition shobha udipi

Human nutrition fourthedition Mahtab S.Bamji and Kamala krishnaswamy

Human nutritionG.N.V.Brahmam

P.R GOVERNMENT COLLEGE(A),KAKINADA
CHOICE BASED CREDIT SYSTEM PAPER-V
HUMAN NUTRITION
ADMITTED BATCH 2022-2023

COURSECODE–BC5223

CREDITS-2

Hrs :4

INSTRUCTIONAL OBJECTIVES:

- 1.To help the students to acquire an elementary knowledge about Food processing of different foods.
- 2.To acquire knowledge about the preservation of foods and different techniques of preservation.

Module – I

Nutrition through life cycle: Basic five food groups, balanced diet, food guide pyramid, dietary guidelines for Indians.

Nutrition in infancy: Growth and development, nutritional requirements, breast feeding, weaning and supplementary foods.

Module – II

Nutrition in preschool age: Physiology development and food intake, development of food habits, diet plan.

Nutrition in adolescence: Growth and development, nutritional requirement, factors influencing dietary pattern of the adolescence.

Module – III

Nutrition in pregnancy: Physiological changes during pregnancy, importance of nutrition in pregnancy, diet for the pregnant mother, complications in pregnancy – gestational diabetes, toxemia, infections and effect of maternal malnutrition on fetus.

Module – IV

Nutrition in lactations: Nutrition requirements, human milk composition and importance, lactogogues, diet planning.

Nutrition in old age: Changes during old age, nutritional requirements, diet planning.

CO-POMapping:

(1:Slight[Low]; 2:Moderate [Medium]; 3:Substantial [High], '-':No Correlation)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1	2	3	2	3	3	3	1	2	2	3	2	3	3
CO2	3	2	3	3	2	3	3	1	3	3	2	3	2
CO3	3	3	3	3	2	2	2	2	2	3	3	3	2
CO4	3	2	2	2	2	2	3	3	1	1	3	3	3

P.R.GOVERNMENT COLLEGE (A), KAKINADA
B.SC(FBC)FOOD SCIENCE

SECOND YEAR SEMESTER-IV

COURSE-HUMAN NUTRITION

WEIGHTAGE TO CONTENT

Time:2hours

Maxmarks:50M

UNIT NO.	ESSAY QUESTIONS 10MARKS	SHORT ANSWER QUESTIONS 5MARKS	MARKS ALLOTED TO THEUNIT	AS PER BLOOMS TAXONOMY
<u>UNIT- I</u>	02	02	30	Understanding remembering
<u>UNIT-II</u>	02	02	30	Analyzing understanding
<u>UNIT-III</u>	01	01	15	Evaluating and understanding
<u>UNIT-IV</u>	01	02	20	Analyzing applying
Total no .of Questions	06	07	95	

NOTE: The question paper setters are requested to kindly adhere to the format given in the above table.

P.R.GOVERNMENT COLLEGE(A),KAKINADA

B.SC(FBC)FOOD SCIENCE

SECONDYEAR IVSEMESTER

HUMAN NUTRITIONS

Model Question Paper

Time2hrs.

Max.Marks-50M

PART-I

Note:-Answer any **THREE** questions choosing at least **ONE** question from each section

Section–A

1. Explain the nutrition in infancy of growth development and nutritional requirements
2. Explain the development of food habits, diet plan in preschool age
3. Write about factors influencing dietary pattern of the adolescences.

10x3=30M

Section–B

1. Write about importance of nutrition in pregnancy
2. Explain the human milk composition and importance lactogogues
3. Write the nutritional requirements of old age

PART–II

Answer any **FOUR** questions

4. Write about dietary guidelines for Indians
4. Explain the food guide pyramid
5. Explain the physiological development and food intake of preschool age
6. Nutritional requirement of adolescence
7. Physiological changes in pregnancy
8. Plan and prepare a diet for old age.
9. Nutritional requirement of lactating women.

4x5=20M

P.R.GOVERNMENT COLLEGE(A),KAKINADA

B.SC(FBC)FOOD SCIENCE

SECONDYEAR IVSEMESTER

Course–HUMAN NUTRITION

Question bank

EASY QUESTIONS (10Marks)

Unit-I

1. Explain the nutrition, growth, development, and nutritional requirements in infants?
2. Write a note on dietary guidelines for Indians?

Unit-II

1. Explain the development and diet plan in preschool age?
2. Write a note on factors influencing dietary patterns of adolescence.
3. Explain growth and development during adolescence and nutritional requirements of an adolescent
- 4.

Unit-III

1. Write a note on importance of nutrition in pregnancy.
2. What are the complications during pregnancy?
3. Write a note on physiological changes during pregnancy?

Unit-IV

1. Write a note on human milk composition and importance of lactogogues.
 2. Explain the nutritional requirements during old age.

SHORT ANSWER QUESTIONS(5Marks)

Unit-I

1. Write a note on five basic food groups?
2. Explain food guide pyramid?
3. Write about breast feeding

Unit-II


1. Write briefly about the physiological development during preschool.
2. Nutritional requirement in adolescence
3. Write a note on dietary pattern of adolescence.
4. Write a diet plan for preschool age.

Unit-III

1. . Physiological changes during pregnancy.
2. Maternal malnutrition in fetus.
3. Write a note on diet for pregnant woman.
4. Gestational diabetes.

Unit-IV

1. Plan and prepare a diet for old age.
2. Nutritional requirement of lactating women.
3. Write a diet plan for lactating women.

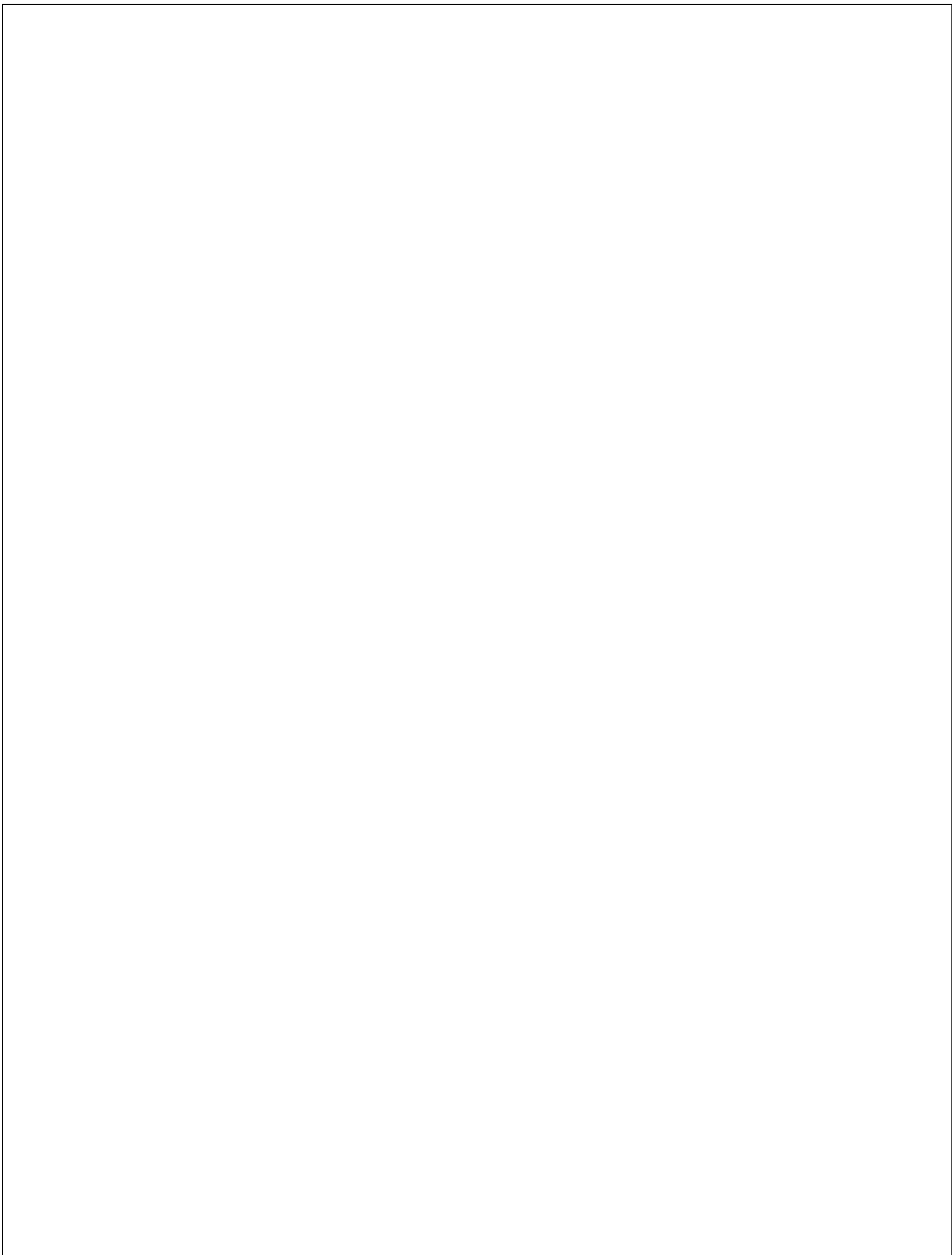
	P.R. GOVERNMENT COLLEGE(A), KAKINADA	Program &Semester			
		IBSC(FBC)			
		FOOD SCIENCE (IV Semester) PAPER-V			
Course Code	TITLEOFTHECOURSE HUMAN NUTRITION PRACTICAL				
Teaching	Hours Allocated: 30(Practical)	L	T	P	C
Pre-requisites	PLANNING ,PREPARING AND SURVING NORMAL DITES	2	-	-	2


PRACTICALS

List of Experiments :(3periods/week)

credits-1

1. Infants.
2. preschool age.
3. school going age.
4. Adolescence.
5. Adult \ laborer
6. pregnancy
7. lactation
8. old age





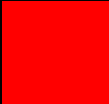
	P.R.GOVERNMENTCOLLEGE(A),KAKINADA	Program &Semester			
Course Code 5224A	TITLEOFTHECOURSE FOOD PROCESSNG AND PRESERVATION	IIBSC(FBC) FOOD SCIENCE (V Semester) PAPER-VI			
Teaching	Hours Allocated:60(Theory)	L	T	P	C
Pre-requisites	TO KNOW ABOUT REPLICATION TRANSCRPTON TRANSLATION AND MOLECULAR BIOLOGY AND RECOMBINANT DNA TECHNOLOGY	-	4	-	3

CourseObjectives: After the successful completion of this course, the student will be able to

1. To help the students to acquire an elementary knowledge about food processing of different foods.
2. To acquire knowledge about the preservations of food different techniques of preservations.

COURSEOUTCOMES

OnCompletionofthecourse,thestudentwillbeableto	
CO1	To help the students to acquire an elementary knowledge about food processing of different foods
CO2	To acquire knowledge about the preservations of food different techniques of preservations

SkillDev elopment		Employability		Entrepreneurship	
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TEXTBOOKS: Food processing and preservation G.Subbulaxmi

Food processing and preservation.Sivakumar

Food processing and preservation.R.Naik

Food processing and preservation Theodoros varzakas

P.R.GOVERNMENT COLLEGE(A),KAKINADA
CHOICE BASED CREDIT SYSTEM
BIOCHEMISTRY SYLLABUS
SEMESTER-V,PAPER-VI
MOLECULAR BIOLOGY AND RECOMBINANT TECHNOLOGY

COURSECODE –5224A

CREDITS – 4

Module I

Food Processing: Processing technology Cereals, legumes and oilseeds: Milling of wheat, rice, compare boiling of rice, advantages and disadvantages. Corn-corn flakes, Legumes – processing, Oilseeds – extraction,. Fruits and Vegetables. Ready to serve beverages – formulation, general steps involved in the processing. Tomato puree, tomato ketchup-general steps involved in processing

Module II

Milk & Milk products: Pasteurized milk-general steps involved in Processing calculation of standardization of milk. Butter – theories of churning. Ice – cream – hardening Dried milks – definition, method of manufacture of whole milk powder and skim milk powder. Meat and Fish Processing – general steps involved in block and IQF freezing. Poultry Processing – general steps involved. Egg processing – freezing and drying of egg products.

Module III

Food Preservation:

Introduction to food preservation, basic principles of food preservation and methods of food steps involved types of cans and bottles. Preservation by use of low temperature: Refrigeration –Freezing, difference between refrigeration and freezing, methods of freezing,

Module IV

Principles and types of concentrated foods. Preservation by using sugar: Sugars concentration, principles of gel formation, preparation of jam, jelly, marmalades, candy, glazed, crystallized fruits. Pickling – principles involved and types of pickles. Fermentation - wine, beer, distilled liquors.

CO-PO Mapping:

(1:Slight[Low]; 2:Moderate [Medium]; 3:Substantial [High], '-':No Correlation)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1	2	3	2	3	3	3	1	2	2	3	2	3	3
CO2	3	2	3	3	2	3	3	1	3	3	2	3	2
CO3	3	3	3	3	2	2	2	2	2	3	3	3	2
CO4	3	2	2	2	2	2	3	3	1	1	3	3	3

P.R GOVERMENT COLLEGE(A),KAKINADA
B.SC(FBC)FOOS SCIENCE
THIRD YEAR SEMESTER-VI COURSE – FOOS PROCESSING AND
PRESERVAIVES

Time:2.30hours

Maxmarks:60

UNITNO.	ESSAY QUESTION S10MARKS	SHORT ANSWER QUESTION S5MARKS	VERY SHORT ANSWER QUESTIONS 2 MARKS	MARKS ALLOTD TO THEUNIT	AS PER BLOOMS TAXONOMY
<u>UNIT-I</u>	02	02	01	32	Analyzing applying
<u>UNIT-II</u>	02	02	01	32	Understanding evaluating
<u>UNIT-III</u>	01	01	02	19	Creating analyzing
<u>UNIT-IV</u>	01	02	02	24	Creating applying
Total no .of Questions	06	07	06		
Total Marks including choice				107	

NOTE: The question paper setter are requested to kindly adhere to the form at given in the above table.

P.R. GOVERNMENT COLLEGE(A), KAKINADA

B.SC(FBC) FOOD SCIENCE

**THIRD YEAR V SEMESTER Course –
FOOD PROCESSING AND PRESERVATIONS**

Model Question Paper

Time 2hrs.

Max.Marks-50M

Time: 2.30hrs

PART – I

Marks:60

Note:- Answer any **THREE** questions choosing at least **ONE** question from each section.

3X10=30M

SECTION – A

1. **1.** Write about food processing technology.
2. Explain the pasteurized milk general properties.
3. Describe the meat and fish processing general steps involved in block in IQF freezing.

SECTION – B

4. Explain the food preservation and methods.
5. Write about principles and types of concentrated foods.
6. Explain the sugar concentration, principles of gel preparation

PART – II

Answer any **FOUR** questions

4x5=20M

7. write about tomato ketchup general steps

8. skim milk powder

9. egg processing

10. food preservations

11. principals of gel formation

Page | 5

12. pickling principals

13. Distilled lickers

PART-III

Answer any FIVE questions. (Very short answer questions) Marks : 5x2=10M

14. Milling of wheat
15. Legumes processing
16. Oil seed
17. Skim milk powder
18. Freezing
19. Egg products

P.R.GOV.T. COLLEGE (A), KAKINADA
CHOICE BASED CREDIT SYSTEM
SEMESTER (PAPER-VI)
Food Processing and Preservation Question Bank
Essay Questions (10M)

Module – I

1. Write about food processing technology?
2. What is paraboiling? Write its advantages and disadvantages?
3. Write about the preservatives used in fruit and vegetable processing?
4. Give a brief note on steps involved in the processing of beverages?

Module - II

1. Explain the pasteurized milk general properties?
2. Describe the meat and fish processing general steps involved in block in IQF freezing.
3. Explain the steps involved in poultry processing?
4. Explain the processing of egg?

Module - III

1. Explain the food preservation methods?
2. Explain the steps involved in canning?
3. Explain different methods of freezing?

Module - IV

1. Write about the principles and types of concentrated foods?
2. Explain the sugar concentration and principles of gel preparation?
3. Discuss the merits and demerits of dehydration?
4. Explain the principles involved in pickling?
5. What is fermentation? Explain the production of wine by fermentation?

Short Answer Questions (5M)

Module - 1

1. Write about hydrogenation and inter esterification?
2. Explain the general steps involved in processing of tomato ketchup?
3. Explain the process of milling of wheat?
4. Explain the processing of legumes?
5. Explain the process of extraction of oilseeds?

Module - II

1. Define the method of manufacture of whole milk powder?
2. Explain the method of manufacture of skim milk powder?
3. Write a note on theories of churning of butter.
4. Explain the Pearson square method

Module-III

1. Explain irradiation properties?
2. Write any two methods of food preservation.
3. Write a note on refrigeration.
4. Explain the process of preservation by removal of moisture?
5. Write the differences between refrigeration and freezing.

Module - IV

1. Explain the preparation of jam.
2. Explain the advantages of ionizing radiation.
3. Write a note on freeze drying.
4. Preparation of cheese.
5. Advantages of De hydro freezing.

Short Answer Questions (2M)

Module - I

1. Milling of rice
2. Refining
3. Preservation
4. Canning
5. Drying

Module - II

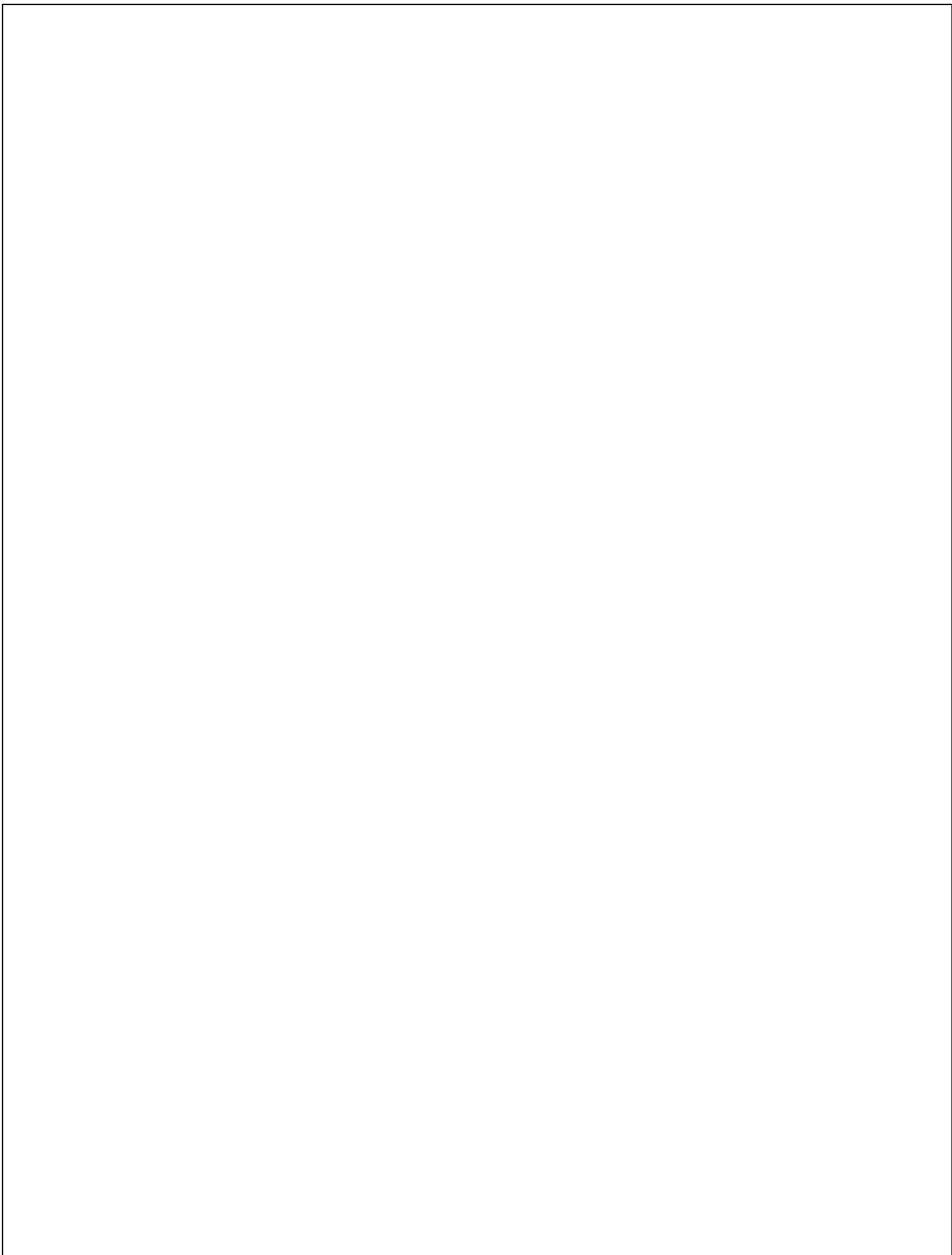
1. IQF freezing
2. Dried milk
3. Pasteurized milk
4. Milk powder
5. Egg production
6. Oil seeds

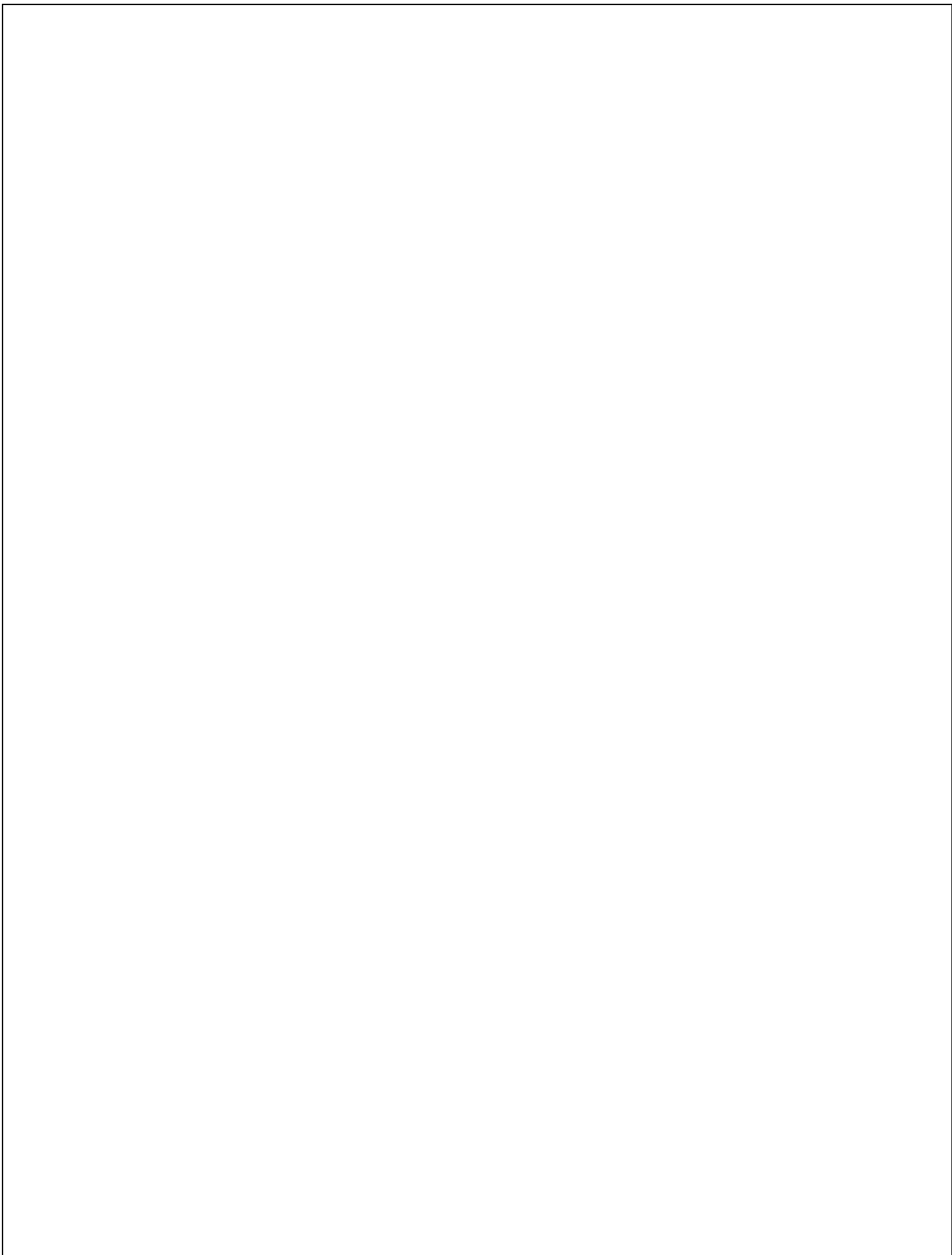
Module - III

1. Freezing
2. Refrigeration
3. Sterilization


Module - IV 1. Dehydration

2. Irradiation
3. Pickling
4. Fermentation
5. De hydro freezing






11.

	P.R. GOVERNMENT COLLEGE(A), KAKINADA	Program &Semester			
		IBSC(FBC)			
		FOOD SCIENCE (VI Semester) PAPER-V			
Course Code	TITLEOFTHECOURSE FOOD PROCESSING AND PRESERVATION PRACTICAL				
Teaching	Hours Allocated: 30(Practical)	L	T	P	C
Pre-requisites	PLANNING ,PREPARING AND SURVING NORMAL DITES	2	-	-	2

LIST OF EXPERIMENTS:

1. Blanching and browning control
2. Preparation of fruit preserves (jam, jelly)
3. Preparation of vegetable preserves (pickle)
4. Dehydrated products – vegetables dices tray drying, osmotic dehydration of seasonal fruit.
5. Tomato processing
6. Fruit pulping / juice / beverage preparation
7. Preparation and standardization of traditional Indian fermented food (idly udid and rice, dhokla – horse gram, dahi – milk) – lactic acid fermentations. – solid state – rise in batter, softness on cooking, weight gain / loss – bulk density)
8. Bread making – texture

	P.R.GOVERNMENTCOLLEGE(A),KAKINADA			Program &Semester III B.SC FOODSCIENCE PAPER-VII (VIISemester)			
	Course Code	TITLEOFTHECOURSE Clinical and therapeutic nutrition					
Teaching	Hours Allocated:60(Theory)			L	T	P	C
Pre-requisites	TO PROVIDE KNOWLEDGE ABOUT DISORDERS OF ENDOCRINE GLANDS AND PROTEIN MAL NUTRITIONS			-	4	-	3

Course Objectives: After the successful completion of this course, the student will be able to understand

1. To understand the scope of diabetics types of dietatry adaption for therapeutic needs.
2. To understand the nutritional management different disorders.

COURSEOUTCOMES

On Completion of the course, the students will be able to	
CO1	Meaning scope of dietetics ,role of dietitian, therapeutic needs
CO2	To understand the nutritional management of different disorders

Skill Development		Employability		Entrepreneurship	
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P.R.GOVERNMENTCOLLEGE(A), KAKINADA

CHOICE BASED CREDIT SYSTEM

III B.Sc FOODSCIENCE

PAPER-VII ELECTIVE-(B)

CLINICAL THERAPUTIC NUTRITION ADMITTED BATCH 2022-2023

MODULE-I Meaning and scope of dietetics, role of dietitian, nutrition care process (NCP) types of dietary adaptations for therapeutic

needs. Types of diets – normal / general, soft and liquid diets mode of feeding – oral, enteral and parenteral feeding. Nutritional Management of infections and fevers: classification and etiology of fever / infection. Medical nutrition therapy in: Typhoid, Tuberculosis, HIV/AIDS.

MODULE – II

Nutritional management of Cancer, Diabetes Mellitus, Coronary Heart Diseases (CHD) and Hypertension.

MODULE – III

Gastro Intestinal disorders: Etiology, symptoms and dietary management of peptic ulcer, constipation, diarrhea.

Liver Diseases: Etiology, symptoms and dietary management of Hepatitis, Cirrhosis, Hepatic coma. Nutritional Management of Renal Disorders: Common Renal Diseases, General Principals of dietary Management in Renal Diseases, Etiology, clinical symptoms and Dietary management of Acute and chronic Nephritis, Nephrotic syndrome.

MODULE – IV

Nutritional care in weight management: Weight imbalance, prevalence and classification; Guidelines for calculating ideal body weight, etiology, clinical manifestations, consequences and dietary management of obesity, underweight.

Nutritional problems of the community: Prevalence, causes, consequences, prevention and control of protein energy Malnutrition (PEM), Vitamin A deficiency, Iodine Deficiency Disorders, Iron Deficiency Anemia

CO-PO Mapping:

(1:Slight[Low]; 2:Moderate [Medium]; 3:Substantial [High], '-':No Correlation)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1	2	3	2	3	3	3	1	2	2	3	2	3	3
CO2	3	2	3	3	2	3	3	1	3	3	2	3	2
CO3	3	3	3	3	2	2	2	2	2	3	3	3	2
CO4	3	2	2	2	2	2	3	3	1	1	3	3	3

TEXTBOOKS: Clinical therapeutic nutrition b.vv.srilaxmi

Clinical nutrition A TEXT BOOK OF DIETITICSJ,RITTER

Ram sewak sharma cltritioninical nu

P.R.GOVERNMENT COLLEGE(A),KAKINADA
IIB.SC FOOD SCIENCE

PAPER -VII ELECTIVE-(B)

CLINICAL& THERAPUTIC NUTRITION

ADMITTED BATCH

WEIGHTAGETOCONTENT

Time:2.30hours

Maxmarks:60 marks

UNIT	ESSAY QUESTIONS 10 MARKS	SHORT ANSWER QUESTIOS 5 MARKS	VERY SHORT ANSWER QUESTONS 2 MARKS	MARKS ALLOTED TO THE UNIT	AS PER BLOOMS TAXNOMY
UNIT-I	01	02	02	24	Understanding
UNIT-II	02	01	01	27	Analyzing
UNIT-III	01	02	02	24	remembering
UNIT-IV	02	02	01	32	Understanding &remembering
Totalno.of Questions	06	07	06		
TotalMarksincludingc hoice				107	

NOTE:The question paper setters are requested to kindly adhere to the format given in the abovetable.

P.R.GOVERNMENT COLLEGE(A),KAKINADA

B.SC (FBC) FOOD SCIENCE

THIRD YEAR V SEMESTER

Course– CLINICAL& THERAPUTIC NUTRITION

ModelQuestionPaper

Time2hrs.

Max.Marks-50M

PART-I

Time:2.30hrs.

Marks;60M

PART-I

Note Time: 3 Hours. Marks: 60M

PART – I

Answer any **THREE** questions choosing at least ONE question from each section. 10x3=30M

SECTION – A

Describe the role of dietitian and scope of dietetics

Write the symptoms of cancer and explain the nutritional managements

Explain the causes of CHD and nutritional management

SECTION – B

Write the general principle and dietary management of renal diseases

Write the etiology symptoms &Dietary management of peptic ulcer

Write the clinical manifestation consequence and dietary management of obesity

PART – II

Answer any **FOUR** questions. (Short answer questions) 5x4=20M

Normal diet

Parenteral feeding

Nutritional management of diabetics

Nutritional management of hyper tension

Symptoms and dietary management of diarrhea

PART – III

Answer any **FIVE** questions. (Very short answer questions) Marks : 5x2=10M

Soft diet

HIV

Hypertension

Cirrhosis

Coma

P.R.GOV.T. COLLEGE (A), KAKINADA CHOICE BASED CREDIT SYSTEM
VI SEMESTER (PAPER-VIII A2)
Clinical and Therapeutic Nutrition Question Bank

Essay Questions (10M)

Module - I

1. Describe the role of dietitian and scope of dietetics?
2. Write a note on nutritional management of infections and fever.
3. Write a note on types of diets and mode of feeding?

Module - II

1. Write the symptoms of cancer and explain the nutritional management?
2. Explain the causes of CHD and nutritional management?

Module - III

1. Write the general principle and dietary management of renal diseases?
2. Write the etiology symptoms & Dietary management of peptic ulcer?
3. Write the etiology symptoms & Dietary management of liver diseases?

Module - IV

1. Write the clinical manifestation consequence and dietary management of obesity?
2. Write a note on Iodine and iron deficiency disorders?

Short Answer Questions (5M)

Module - I

1. Normal diet
2. Parenteral feeding
3. Medical nutrition therapy in HIV/AIDS
4. Write a note on nutritional therapy in tuberculosis

Module - II

1. Nutritional management of diabetics
2. Nutritional management of hypertension

Module - III

1. Symptoms and dietary management of diarrhea
2. Write a note on Nephrotic syndrome
3. Write a note on acute and chronic nephritis?
4. Discuss briefly the common renal diseases.

Module - IV

1. Write a note on ideal body weight?
2. Write a note on vitamin A?
3. Write a note on protein energy malnutrition (PEM)?
4. Discuss the nutritional management in underweight?

Very Short Answer Questions (2M)

P.R.GOV.T. COLLEGE (A), KAKINADA CHOICE BASED CREDIT SYSTEM

VI SEMESTER (PAPER-VIII A2)

Clinical and Therapeutic Nutrition Question Bank

Essay Questions (10M)

Module - I

4. Describe the role of dietitian and scope of dietetics?
5. Write a note on nutritional management of infections and fever.
6. Write a note on types of diets and mode of feeding?

Module - II

3. Write the symptoms of cancer and explain the nutritional management?
4. Explain the causes of CHD and nutritional management?

Module - III

4. Write the general principle and dietary management of renal diseases?
5. Write the etiology symptoms & Dietary management of peptic ulcer?
6. Write the etiology symptoms & Dietary management of liver diseases?

Module - IV

3. Write the clinical manifestation consequence and dietary management of obesity?
4. Write a note on Iodine and iron deficiency disorders?

Short Answer Questions (5M)

Module - I

5. Normal diet
6. Parenteral feeding
7. Medical nutrition therapy in HIV/AIDS
8. Write a note on nutritional therapy in tuberculosis

Module - II

3. Nutritional management of diabetics
4. Nutritional management of hypertension

Module - III

5. Symptoms and dietary management of diarrhea
6. Write a note on Nephrotic syndrome
7. Write a note on acute and chronic nephritis?
8. Discuss briefly the common renal diseases.

Module - IV

5. Write a note on ideal body weight?
6. Write a note on vitamin A?
7. Write a note on protein energy malnutrition (PEM)?
8. Discuss the nutritional management in underweight?

Very Short Answer Questions (2M)

Module - I

1. Soft diet
2. HIV
3. Typhoid
4. Enteral feeding
5. Liquid diet

Module - II

1. Hypertension
2. Cancer
3. Diabetes
4. Coronary heart diseases (CHD)

Module - III

1. Coma
2. Acute nephritis
3. Constipation
4. Cirrhosis
5. Hepatitis

Module - IV

1. Weight imbalance
2. Obesity Anemia
3. Anemia
4. Ideal body weight

Module - I

6. Soft diet
7. HIV
8. Typhoid
9. Enteral feeding
10. Liquid diet

Module - II

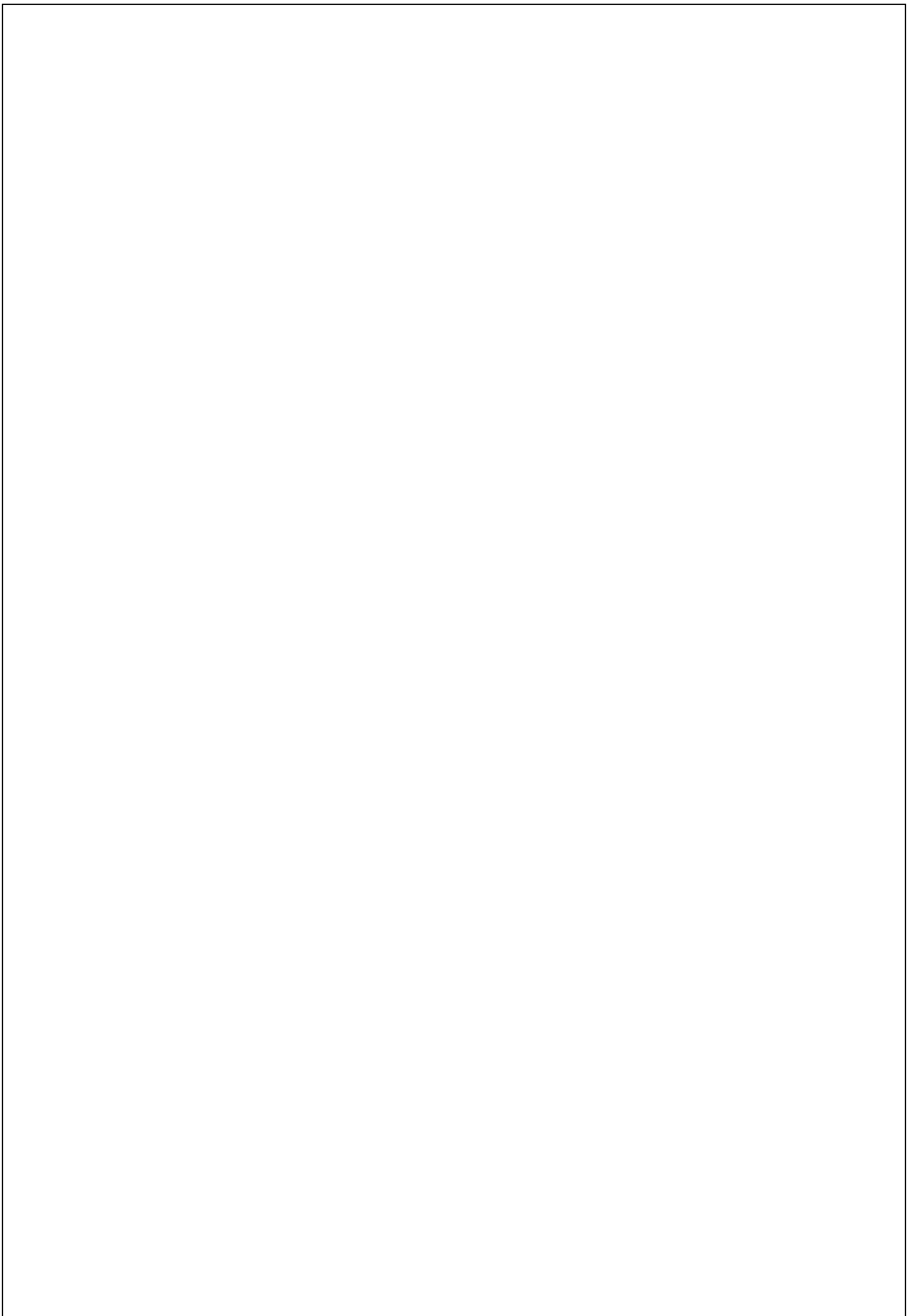
5. Hypertension
6. Cancer
7. Diabetes
8. Coronary heart diseases (CHD)

Module - III

6. Coma
7. Acute nephritis
8. Constipation
9. Cirrhosis
10. Hepatitis

Module - IV

5. Weight imbalance
6. Obesity Anemia
7. Anemia
8. Ideal body weight



P.R.GOVERNMENT COLLEGE(A),KAKINADA

B.SC(FBC) BIOCHEMISTRY

THIRD YEAR VSEMESTER

Course–BIO CHEMICAL CORRELATIONS IN DISORDERS

Question bank

EASY QUESTIONS (10 Marks)

Unit-I

Essay Questions (10M)

Module - I

7. Describe the role of dietitian and scope of dietetics?
8. Write a note on nutritional management of infections and fever.
9. Write a note on types of diets and mode of feeding?

Module - II

5. Write the symptoms of cancer and explain the nutritional management?
6. Explain the causes of CHD and nutritional management?

Module - III

7. Write the general principle and dietary management of renal diseases?
8. Write the etiology symptoms & Dietary management of peptic ulcer?
9. Write the etiology symptoms & Dietary management of liver diseases?

Module - IV

5. Write the clinical manifestation consequence and dietary management of obesity?
6. Write a note on Iodine and iron deficiency disorders?

Short Answer Questions (5M)

Essay Questions (10M)

Module - I

10. Describe the role of dietitian and scope of dietetics?
11. Write a note on nutritional management of infections and fever.
12. Write a note on types of diets and mode of feeding?

Module - II

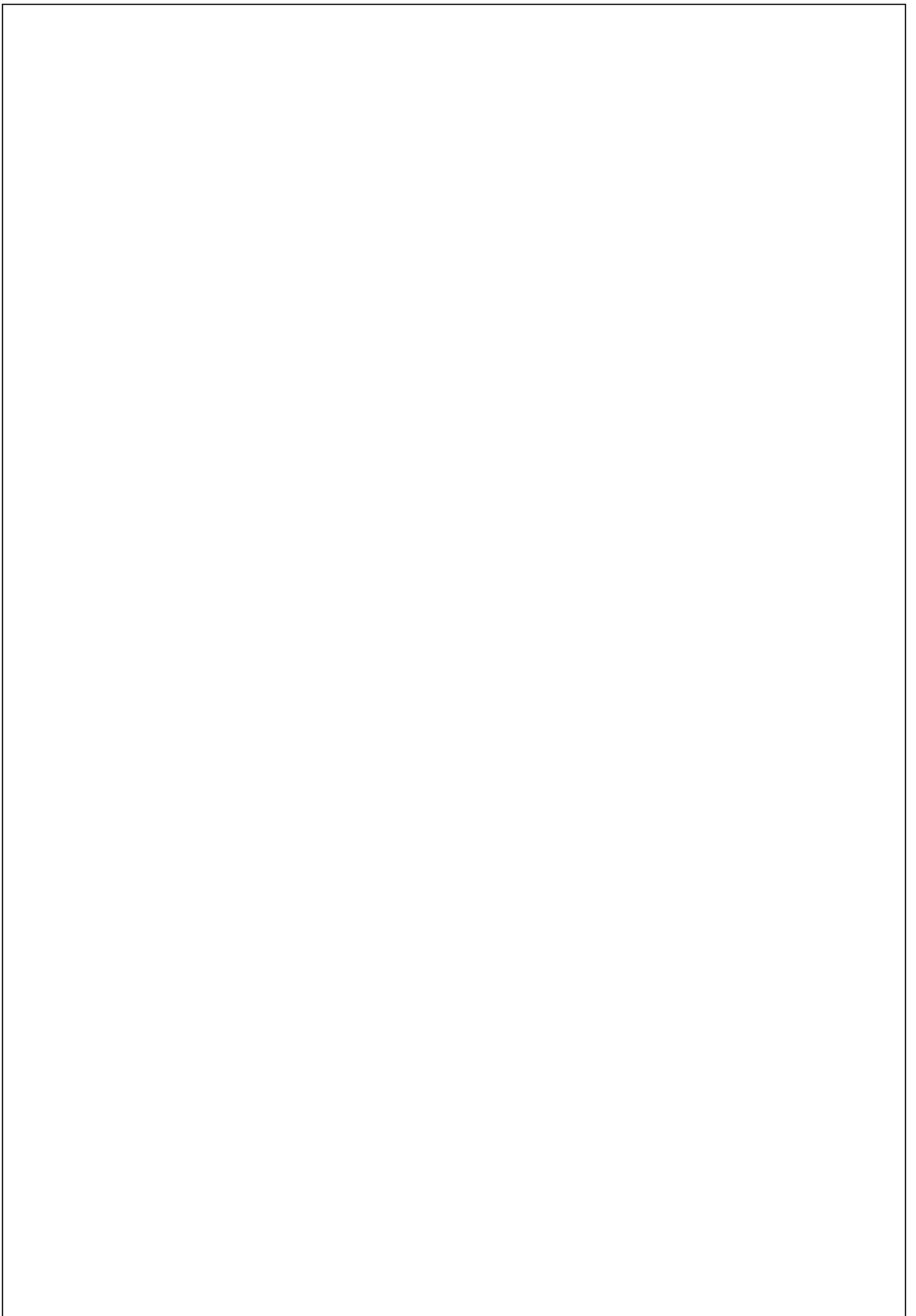
7. Write the symptoms of cancer and explain the nutritional management?
8. Explain the causes of CHD and nutritional management?

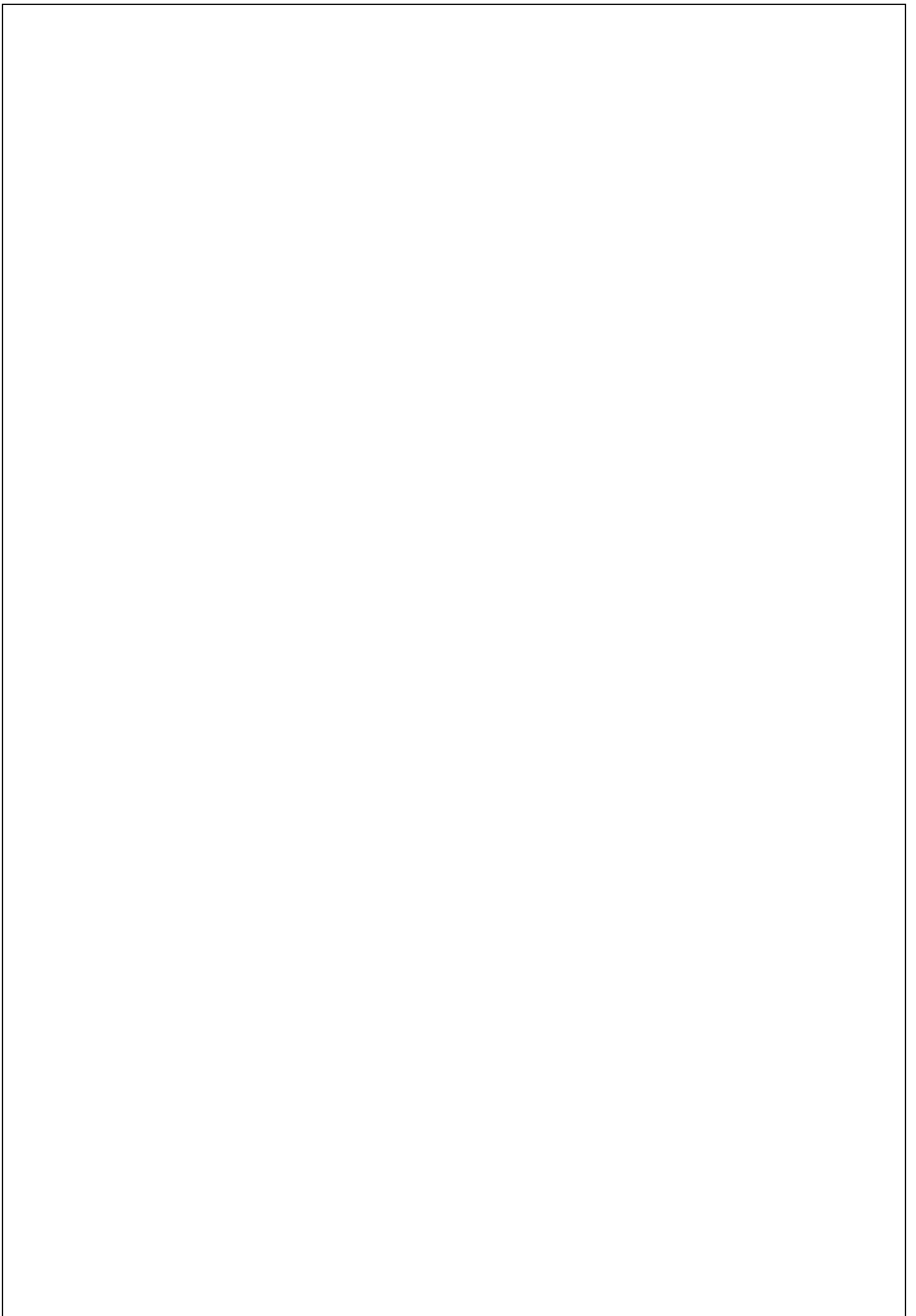
Module - III


10. Write the general principle and dietary management of renal diseases?
11. Write the etiology symptoms & Dietary management of peptic ulcer?
12. Write the etiology symptoms & Dietary management of liver diseases?

Module - IV

7. Write the clinical manifestation consequence and dietary management of obesity?
8. Write a note on Iodine and iron deficiency disorder





	P.R.GOVERNMENTCOLLEGE(A),KAKINADA	Program &Semester III B.SC(FBC), BIOCHEMISTRY (V Semester)			
CourseCode 5224P	TITLEOFTHECOURSE BIO CHEMICAL CORRELATIONS IN DISORDERS PRACTICAL				
Teaching	HoursAllocated:30(Practical)	L	T	P	C
Pre-requisites	TO LEARN ABOUT THE BIOLGICAL PARAMETERS	2	-	-	2

LIST OF EXPERIMENTS:

- Planning and preparation of rehabilitation diets
- Planning and preparation of diet for obesity and underweight conditions
- Planning and preparation of diet for insulin and non insulin dependent diabetes mellitus
- Planning and preparation of diet for gastrointestinal disorders
- Planning and preparation of diet for cardiovascular disorders
- Planning and preparation of diet for hepatic disorders
- Planning and preparation of diet for pancreatic disorders
- Planning and preparation of diet for renal disorders
- Preparation of diet counseling aids for common disorders

