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

BOARD OF STUDIES

DEPARTMENT OF FOOD SCIENCE
2020 – 21

(CHOICE BASED CREDIT SYSTEM)

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

BOARD OF STUDIES

DEPARTMENT OF FOOD SCIENCE

2020 – 21

(CHOICE BASED CREDIT SYSTEM)

P.R.GOVT.COLLEGE (AUTONOMOUS) KAKINADA
2020 – 2021
BOARD OF STUDIES MEETING –Dt. 19-06-2020
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 : Resolved to implement 60% external and 40% internal marks for both theory and practical's from the academic year 2018 – 19.

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)

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.

P.R.GOVERNMENT COLLEGE (AUTONOMOUS), KAKINADA
DEPARTMENT OF FOOD SCIENCE

BOARD OF STUDIES MEETING 2020 – 21
CHOICE BASED CREDIT SYSTEM
(WITH EFFECTIVE FROM 2014 – 15)

Time: 11.00 A.M. **Date: 19-06-2020**

Venue: Online mode through Google meet

The BOARD OF STUDIES Meeting of the Department of Food Science took place at 11.00 A.M. on 19-06-2020 in online mode through Video conference in Google meet in the Department of Food Science P.R.Govt.College (A) Kakinada for the year 2020 – 21. The following members attended in the video conference.

Sl. No	Name and affiliation	Designation	Signature
01	Dr. P.VIJAYA NIRMALA, Assistant Professor In Biosciences Adikavi Nannaya University, Rajamahendravaram	Vice-Chancellor's Nominee	
02	Dr. M. Suvarchala, Lecturer in Home Science, A.S. D. Govt. Degree College(W) Kakinada	Subject Expert	
03	Dr. A. Sreenivasulu Director, V.S.Lakshmi Research Center Kakinada.	Subject Expert	
04	Sri T.V.V.Satyanarayana, Lecturer In Chemistry Govt. Degree College, Ramachandrapuram.	Subject Expert & Meritorious Alumnus	
05	Sri V. Mallikarjuna Sarma Lecturer in-Charge Dept. of Biochemistry P.R.Govt.College, Kakinada.	Member	
06	Dr. T. Vara Prasad Lecutrer in Charge Department of Chemistry P.R.Govt.College, Kakinada.	Member	
07	Mrs.S. Tejaswi Uma Bharathi Guest Facualty in Food Science P.R.Govt College, Kakinada	Member	S.Tejaswi
08	Smt. S. Sri Latha, Guest Faculty in Bio Chemistry P.R.Govt College, Kakinada	Member	S. Sri Latha
09			
10			

P.R.GOVT.COLLEGE (AUTONOMOUS) KAKINADA
DEPARTMENT OF FOOD SCIENCE
BOARD OF STUDIES MEETING 2020 – 21
LIST OF EXAMINERS

S.No.	Name of the Examiner	Subject	Name of the College
1	Dr.P.Vijaya Nirmala	Assistant professor in Biosciences	Adikavi Nannaya University, Rajamahendravaram
2	Dr.P.Jyothi Kumari	Lecturer in Biosciences	St.Theressa 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

P.R.GOVT.COLLEGE (AUTONOMOUS) KAKINADA
DEPARTMENT OF BIOCHEMISTRY AND FOOD SCIENCE
BOARD OF STUDIES MEETING 2020 – 21
CHOICE BASED CREDIT SYSTEM (FOOD SCIENCE)

Year	Sem	Course code	Course Title	Hrs /week	Maximum Marks			Credits
					Int.	Ext.	Tot.	
I	I	I	Raw and processed commodities in food science	4	30	70	100	3
		PRAC.	Qualitative and Quantitative analysis-1	3	30	70	100	2
	II	II	Food biochemistry	4	30	70	100	3
		PRAC.	Qualitative and Quantitative analysis-2	3	30	70	100	2
II	III	III	Human physiology	4	30	70	100	3
		PRAC.	Human physiology	3	30	70	100	2
	IV	IV	Food Microbiology	4	30	70	100	3
		PRAC.	Food Microbiology lab	3	30	70	100	2
III	V (Any one elective)	V	Advanced core : Food processing and preservation	3	30	70	100	3
		PRAC.	Food processing and preservation	3	30	70	100	2
		VI	Adv-Elective1: Food safety and quality control	3	15	35	50	2
		PRAC.	Food safety and quality control	3	30	70	100	2
		VIIA	Adv-Elective2: Principles of human nutrition	3	15	35	50	2
		PRAC.	Principles of human nutrition	3	30	70	100	2
	VI	VIIB	Skill based Elective 1: Food product development and quality evaluation	3	15	35	50	2
		PRAC.	Food product development and quality evaluation	3	30	70	100	2
		VIII A1	General elective: Food biotechnology	3	15	35	50	2
		PRAC.	Food biotechnology	3	15	35	50	-
		VIII A2	Skill based Elective 2 : Clinical and therapeutic nutrition	3	15	35	50	2
		PRAC.	Clinical and therapeutic nutrition	3	15	35	50	2
		A3	Project Work	2	-		100	2

Details of Online courses proposed for the year 2020 – 21

S.No.	Name of Online Course	Conducted by	No. of Weeks	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 2020 - 21

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

P.R.GOVT.COLLEGE (AUTONOMOUS) KAKINADA
FOOD SCIENCE – SYLLABUS
(Raw and processed commodities in Food Science)
SEMESTER – I (PAPER-I)
CHOICE BASED CREDIT SYSTEM

Hrs.: 4 CREDITS – 3

Objectives:

1. To understand the basic commodities both raw and processed 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.

Module – I

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.

Module – II

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.

Module – III

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.

Module – IV

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

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

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

P.R.GOVT.COLLEGE (A), KAKINADA
CHOICE BASED CREDIT SYSTEM
I SEMESTER (PAPER-I)

MODEL QUESTION PAPER

Time : 2 ½ Hours. Marks:60M

PART – I

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

SECTION – A

1. Describe the uses of rice and wheat in variety of preparations. Write their nutritional values.
2. Write an account on various products of milk.
3. Write the nutritive value and structure 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 in food.
6. Explain uses of major spices of India.

PART – II

Answer any FOUR questions. (Short answer questions) **4x5=20M**

7. Write a note on 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 the maintenance of health.
11. Write about sugar boiled confectionary.
12. Write the composition of Tea and Coffee?

PART – III

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

13. What are cereals? Mention any two cereals.
14. How are pulses and legumes produced?
15. How do you select good quality of pulses?
16. How is milk spoiled?
17. What is the effect of heat on egg protein?
18. Write the structure of egg?

P.R.GOVT.COLLEGE (a), KAKINADA

CHOICE BASED CREDIT SYSTEM

Raw and processed commodities in Food Science

BLUE PRINT FOR QUESTION PAPER SETTER

Time : 2 ½ Hours. Marks:60M

MODULENO.	ESSAY QUESTIONS 10 MARKS	SHORT ANSWER QUESTIONS 5 MARKS	VERY SHORT ANSWER QUESTIONS 2 MARKS	MARKS ALLOTED TO THE UNIT
MODULE – I	01	01	02	19
MODULE – II	02	01	02	29
MODULE – III	01	02	01	22
MODULE – IV	02	02	01	32
Total no. of questions	06	06	12	
Total marks including choice				102

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

P.R.GOVT.COLLEGE (A), KAKINADA

CHOICE BASED CREDIT SYSTEM

FOOD SCIENCE (Qualitative and Quantitative Analysis - 1)

PRACTICAL SYLLABUS

AT THE END OF SEMESTER - I

List of Experiments

1. Standardization of Sodium hydroxide.
2. Standardization of Hydrochloric acid
3. Standardization of Sodium thiosulphate
4. Standardization of Potassium permanganate
5. Standardization of EDTA solution
6. Standardization of Fehling's solution

P.R.GOVT.COLLEGE (A) KAKINADA
FOOD SCIENCE – SYLLABUS (FOOD BIOCHEMISTRY)
CHOICE BASED CREDIT SYSTEM
SEMESTER – II (PAPER-II)

Hrs.: 4 Credits : 3

OBJECTIVES:

To enable the students to:

a. Acquire knowledge on the macro and micro constituents of the food.
b. Know the structure and chemical & biological characteristics of constituents of food.

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, sphingo lipids, 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. Minerals – Ca, Fe, K, Na, P, I, F – sources, functions, deficiency diseases and excess. (absorption of calcium and Iron); **Water** – Sources, functions, deficiency diseases

P.R.GOVT.COLLEGE (A), KAKINADA
CHOICE BASED CREDIT SYSTEM
FOOD BIOCHEMISTRY
II SEMESTER (PAPER-II)

MODEL QUESTION PAPER

Marks:60M

Time : 2 ½ Hours.

PART – I

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

SECTION – A

1. Write the important properties of glucose and fructose.
2. What are Amino acids? Give the classification of amino acids.
3. Explain biological functions, deficiency and excess of proteins.

SECTION – A

4. Explain composition and classification of fatty acids.
5. Mention about water soluble vitamins.
6. Discuss the sources, functions, diseases of calcium, iron and phosphorous.

PART – II

Answer any **FOUR** questions. (Short answer questions) 4x5=20M

7. Write the sources of glucose.
8. Explain inversion of sugar.
9. Write a note on zwitter ion.
10. Write about saturated, unsaturated and essential fatty acids.
11. Write about flavour changes in fat and oils.
12. Mention fat soluble vitamins and write their functions.

PART – III

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

13. Write the structure of sucrose?
14. What is gelatinization of starch?
15. What is isoelectric point?
16. What is oxidative rancidity?
17. Write the structure of phospholipids?
18. Write the sources of Vitamin – C?

P.R.GOVT.COLLEGE (A), KAKINADA

CHOICE BASED CREDIT SYSTEM

Raw and processed commodities in Food Science

BLUE PRINT FOR QUESTION PAPER SETTER

Time : 2 ½ Hours.

Marks:60M

MODULENO.	ESSAY QUESTIONS 10 MARKS	SHORT ANSWER QUESTIONS 5 MARKS	VERY SHORT ANSWER QUESTIONS 2 MARKS	MARKS ALLOTED TO THE UNIT
MODULE – I	01	02	02	24
MODULE – II	02	01	01	34
MODULE – III	01	02	02	24
MODULE – IV	02	01	01	34
Total no. of questions	06	06	06	
Total marks including choice				116

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

P.R.GOVT.COLLEGE (A), KAKINADA
CHOICE BASED CREDIT SYSTEM
FOOD SCIENCE (Qualitative and Quantitative Analysis - 2)
PRACTICAL SYLLABUS
AT THE END OF SEMESTER - II

Hrs.: 3

Credits : 2

List of Experiments :

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

P.R.GOVT.COLLEGE (A), KAKINADA
CHOICE BASED CREDIT SYSTEM
FOOD SCIENCE SYLLABUS (HUMAN PHYSIOLOGY)
SEMESTER – III (PAPER-III)

Hrs: 4

CREDITS: 3

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.

Module – I

Sensation of smell: Olfactory receptors, olfactory pathway, generator potential in olfactory receptor, classification of odour, threshold for olfactory sensation, adaptation, applied physiology-abnormalities of olfactory sensation.

Sensation of taste: Taste buds-situation, structure, taste pathway, primary sensations, discrimination of different taste sensation, taste sensations and chemical constitutions, mechanism of stimulation of taste receptors – generator potential in taste receptor cells, applied physiology – abnormalities of 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 various body functions-obesity, sleep, memory.

Module – III

Blood: Composition and functions of blood, plasma proteins, Haemoglobin, haematopoiesis, coagulation of blood, blood groups, erythroblastosis foetalis.

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 pH of 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, renal disorders, Dialysis.

P.R.GOVT.COLLEGE (A), KAKINADA

CHOICE BASED CREDIT SYSTEM

FOOD SCIENCE (HUMAN PHYSIOLOGY)

III SEMESTER (PAPER-III)

MODEL QUESTION PAPER

Time : 2.30 Hours. Marks:60M

PART – I

Answer any **THREE** questions choosing atleast 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 bolos?
19. What is obesity?

P.R.GOVT.COLLEGE (A), KAKINADA

CHOICE BASED CREDIT SYSTEM

Food Science (Human Physiology)

SEMESTER – III (PAPER-III)

BLUE PRINT FOR QUESTION PAPER SETTER

Time : 3 Hours. Marks:60M

MODULENO.	ESSAY QUESTIONS 10 MARKS	SHORT ANSWER QUESTIONS 5 MARKS	VERY SHORT ANSWER QUESTIONS 2 MARKS	MARKS ALLOTED TO THE UNIT
MODULE – I	01	02	02	24
MODULE – II	02	02	01	34
MODULE – III	01	02	02	24
MODULE – IV	02	01	01	34
Total no. of questions	06	07	06	
Total marks including choice				107

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

P.R.GOVT.COLLEGE (A), KAKINADA

CHOICE BASED CREDIT SYSTEM

Food Science (Human Physiology)

SEMESTER – III (PAPER-III)

Practicals at the end of Semester - III

List of Experiments :

1. Sensory evaluation
2. Selection of Panel
3. Determination of A, B, O and Rh blood groups
4. Urine test
5. Amylase enzyme activity

P.R.GOVT.COLLEGE (A), KAKINADA

CHOICE BASED CREDIT SYSTEM

FOOD SCIENCE SYLLABUS (FOOD MICROBIOLOGY)

SEMESTER – IV (PAPER-IV)

Hrs.: 4 CREDITS :3

OBJECTIVES :

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

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) PH ii) Water activity iii) O_2 availability iv) temperature on the growth of microorganisms. Indicator Microorganismss: sources, method of detection, growth and survival of a) coliform b) fecal streptococoi 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 micro organisms, 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.

P.R.GOVT.COLLEGE (A), KAKINADA

CHOICE BASED CREDIT SYSTEM

FOOD SCIENCE (FOOD MICROBIOLOGY)

IV SEMESTER (PAPER-IV)

MODEL QUESTION PAPER

Time : 3 Hours. Marks:60M

PART – I

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

SECTION – A

1. How bacteria are classified on the basis of morphology?
2. Write about growth curve and explain the phases of growth curve?
3. What are the Intrinsic and extrinsic parameters of microbial growth?

SECTION – A

4. What are the different types of culture media?
5. Write the contamination and microbial spoilage of vegetables?
6. Write the 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?

PART – III

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

14. Yeast
15. Microbiology
16. Bacteriophage
17. O_2 availability
18. Water activity
19. Sterilization

P.R.GOVT.COLLEGE (A), KAKINADA

CHOICE BASED CREDIT SYSTEM

SEMESTER – IV **(PAPER-IV)**

FOOD SCIENCE (FOOD MICROBIOLOGY)

BLUE PRINT FOR QUESTION PAPER SETTER

Time : 3 Hours.
Marks:60M

MODULENO.	ESSAY QUESTIONS 10 MARKS	SHORT ANSWER QUESTIONS 5 MARKS	VERY SHORT ANSWER QUESTIONS 2 MARKS	MARKS ALLOTED TO THE UNIT
MODULE – I	01	02	02	24
MODULE – II	02	02	02	34
MODULE – III	01	02	01	22
MODULE – IV	02	01	01	27
Total no. of questions	06	07	06	
Total marks including choice				107

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

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

FOOD SCIENCE (FOOD MICROBIOLOGY)
PRACTICAL SYLLABUS
AT THE END OF SEMESTER – IV (PAPER-IV)

Hrs.: 3 Credits : 2

List of Experiments :

1. Study of compound microscope
2. Working and handling of common microbiological laboratory equipments and materials; preparation of microscopic examination.
3. Monochrome staining
4. Differential staining
5. Capsule staining
6. Spore staining
7. Microscopic examination of living organisms – Hanging Drop Mount method for the demonstration of bacterial motility
8. Negative staining of bacteria
9. Composition, preparation and sterilization of media nutrient agar, potato dextrose agar, Mc Conkey agar, EMB agar.
10. Isolation, enumeration and characteristics of micro organisms.
11. Microbiology of air and surface isolation of micro organisms.

P.R.GOVT.COLLEGE (A), KAKINADA

CHOICE BASED CREDIT SYSTEM

FOOD SCIENCE (FOOD PROCESSING AND PRESERVATION)

SEMESTER – V (PAPER-V)

Hrs: 2

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, refining, and hardening of fat – hydrogenation and inter esterification. Fruits and Vegetables. Ready to serve beverages – formulation, general steps involved in the processing, FPO specification. Tomato puree, tomato ketchup-general steps involved in processing. Preservatives used in fruit and vegetables processing.

Module II

Milk & Milk products: Pasteurized milk-general steps involved in Processing calculation of standardization of milk – application of Pearson Square method of manufacture of sterilized milk, toned 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 preservation by use of high temperature Pasteurization, sterilization, canning, steps involved types of cans and bottles. Preservation by use of low temperature: Refrigeration – Preservation by use of very low temperature, Freezing, difference between refrigeration and freezing, methods of freezing, Preservation by removal of moisture.

Module IV

Principles and types of concentrated foods; Drying and dehydration - merits and demerits. Freeze drying, dehydrofreezing – advantages. 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, vinegar and cheese. Irradiation - properties of foods.

P.R.GOVT.COLLEGE (A), KAKINADA

CHOICE BASED CREDIT SYSTEM

FOOD SCIENCE (Food processing and preservation)

SEMESTER - V

MODEL QUESTION PAPER

Time : 3 Hours. Marks:60M

PART – I

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

SECTION – A

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. (Short answer questions) 5x4=20M

7. Write about hydrogenation and inter estrification.
8. Explain the tomato ketchup general steps involved in processing.
9. Definition method of manufacture of whole milk powder.
10. Explain the egg processing.
11. Explain the irradiation properties.
12. Explain the preparation of jam.
13. Explain the preservation by removal of moisture

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.GOVT.COLLEGE (A), KAKINADA
CHOICE BASED CREDIT SYSTEM
FOOD SCIENCE (Food processing and preservation)
SEMESTER - V
BLUE PRINT FOR QUESTION PAPER SETTERS

Time : 3 Hours.
Marks:60M

MODULE NO.	ESSAY QUESTIONS 10 MARKS	SHORT ANSWER QUESTIONS 4 MARKS	VERY SHORT ANSWER QUESTIONS 2 MARKS	MARKS ALLOTED TO THE UNIT
MODULE – I	01	02	03	24
MODULE – II	02	02	03	34
MODULE – III	01	02	03	24
MODULE – IV	02	02	03	34
Total no. of questions	06	08	12	
Total marks including choice				116

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

P.R.GOVT.COLLEGE (A), KAKINADA
CHOICE BASED CREDIT SYSTEM
FOOD SCIENCE (Food processing and preservation)
SEMESTER - V
PRACTICAL SYLLABUS

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
9. Confectionery
10. Visit to food processing and preservation unit.

P.R.GOVT.COLLEGE (A), KAKINADA
CHOICE BASED CREDIT SYSTEM
FOOD SCIENCE SYLLABUS (Food Safety and Quality control)
SEMESTER – V (PAPER-VI)

Hrs : 2 **Credits : 3**

Module – I

Hazards – microbiological, nutritional, environmental, natural toxicants, pesticide residues and food additives.

Sanitary and hygienic practices; HACCP; Quality manuals, documentation and audits; Indian and international quality stems and standards like ISO and Food codex; export, import policy, export documentation, laboratory quality procedures and assessment of laboratory performance; applications in different food industries; food adulteration and food safety – IPR and patent.

Module – II

Introduction to quality control and quality assurance, Food safety measures, Current concepts of quality control.

Module – III

Quality assurance programme: Quality plan, documentation of records, product standards product and purchase specifications, process control, hygiene and housekeeping, corrective action.

Module – IV

Concepts of quality management : objectives, importance and functions of quality control; quality management systems in India; sampling procedures and plans; food safety and Standards Act 2006; domestic regulations; global food safety initiative; various organization dealing with inspections, traceability and authentication, certification and quality assurance (PFA, FPO, MMPO, MPO, AGMARK, BIS), labeling issues, international scenario international food standards.

P.R.GOVT.COLLEGE (A), KAKINADA

CHOICE BASED CREDIT SYSTEM

FOOD SCIENCE SYLLABUS (Food Safety and Quality control)

SEMESTER – V (PAPER-VI)

MODEL QUESTION PAPER

Time : 3 Hours. Marks:60M

PART – I

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

SECTION – A

1. Explain the laboratory quality procedures and assessment of laboratory performance.
2. Explain the application in different food industries.
3. Write about quality control and quality assurance.

SECTION – B

4. Explain the products standards and purchase specification.
5. Describe the importance and function of quality control
6. Explain the sampling procedures and plans.

PART – II

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

7. Explain the food adulteration and food safety.
8. Write about nutritional hazards and natural toxicants.
9. Write the food safety measures.
10. Explain about current concept of quality control.
11. Write the documentation of records.
12. Explain the hygiene and housekeeping.

PART – III

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

13. Pesticide residues
14. Food additives
15. HACCP
16. Quality control
17. Food safety
18. Assurance

P.R.GOVT.COLLEGE (A), KAKINADA
CHOICE BASED CREDIT SYSTEM
FOOD SCIENCE SYLLABUS (Food Safety and Quality control)
SEMESTER – V (PAPER-VI)

BLUE PRINT FOR QUESTION PAPER SETTERS

Time : 3 hours *Max.marks:60*

MODULE NO.	ESSAY QUESTIONS 10 MARKS	SHORT ANSWER QUESTIONS 4 MARKS	VERY SHORT ANSWER QUESTIONS 2 MARKS	MARKS ALLOTED TO THE UNIT
MODULE – I	02	02	03	24
MODULE – II	01	02	03	34
MODULE – III	02	02	03	24
MODULE – IV	01	02	03	34
Total no. of questions	06	08	12	
Total marks including choice				116

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

P.R.GOVT.COLLEGE (A), KAKINADA

CHOICE BASED CREDIT SYSTEM

FOOD SCIENCE SYLLABUS (Food Safety and Quality control)

SEMESTER – VI

Advanced Elective - I

PRACTICAL SYLLABUS

Market sample evaluation and statistical application of:

1. Qualitative tests for detection of adulterants
2. Test for assessment of purity of water
3. Test for assessment of quality of milk and milk products
4. Test for assessment of quality of cereals / millets
5. Test for assessment of quality of pulses
6. Test for assessment of quality of fats and oils
7. Test for assessment of quality of meat / fish products
8. Test for assessment of quality of canned / bottle fruits and vegetables
9. Test for assessment of quality of baked foods

P.R.GOVT.COLLEGE (A), KAKINADA

CHOICE BASED CREDIT SYSTEM

FOOD SCIENCE SYLLABUS (PRINCIPLES OF HUMAN NUTRITION)

SEMESTER – VI (PAPER-VIIA)

Hrs: 2

Credits: 3

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.

P.R.GOVT.COLLEGE (A), KAKINADA

CHOICE BASED CREDIT SYSTEM

FOOD SCIENCE SYLLABUS (Principles of human nutrition)

SEMESTER – V (PAPER-VIIA)

MODEL QUESTION PAPER

Time : 3 Hours. Marks:60M

PART – I

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

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.

SECTION – B

4. Write about importance of nutrition in pregnancy
5. Explain the human milk composition and importance lactogogues
6. Write the nutritional requirements of old age

PART – II

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

7. Write about dietary guidelines for Indians
8. Explain the food guide pyramid
9. Explain the physiological development and food intake of preschool age
10. Nutritional requirement of adolescence
11. Physiological changes in pregnancy

PART – III

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

12. Balance diet
13. Weaning
14. Breast feeding
15. Food intake
16. Adolescence
17. Nutritional requirements

P.R.GOVT.COLLEGE (A), KAKINADA

CHOICE BASED CREDIT SYSTEM

FOOD SCIENCE SYLLABUS (Principles of human nutrition)

SEMESTER – V (PAPER-VIIA)

BLUE PRINT FOR QUESTION PAPER SETTERS

Time : 3 hours

Max.marks:60

MODULE NO.	ESSAY QUESTIONS 10 MARKS	SHORT ANSWER QUESTIONS 4 MARKS	VERY SHORT ANSWER QUESTIONS 2 MARKS	MARKS ALLOTED TO THE UNIT
MODULE – I	01	02	03	24
MODULE – II	02	02	03	34
MODULE – III	01	02	03	24
MODULE – IV	02	02	03	34
Total no. of questions	06	08	12	
Total marks including choice				116

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

P.R.GOVT.COLLEGE (A), KAKINADA

CHOICE BASED CREDIT SYSTEM

FOOD SCIENCE SYLLABUS (PRINCIPLES OF HUMAN NUTRITION)

SEMESTER – V (PAPER-VIIA)

PRACTICAL SYLLABUS

Planning, preparing and serving normal diets for

1. Infants
2. Preschool age
3. School going age
4. Adolescence
5. Adult / Laborer
6. Pregnancy
7. Lactation
8. Old age

P.R.GOVT.COLLEGE (A), KAKINADA

CHOICE BASED CREDIT SYSTEM

FOOD SCIENCE SYLLABUS

(PRODUCT DEVELOPMENT AND QUALITY EVALUATION)

SEMESTER – VI (PAPER-VIIB)

Hrs.: 3 **Credits : 3**

Module – I

Method of Food Product development, product design, food innovation case studies, Recipe development; advance technological applications for traditional recipe recent development in food ingredients / additives, flavorings, colorings, emulsifiers, stabilizer and sweeteners. Selection of materials / ingredients for specific purpose; modifications for production on large scale, cost effectiveness, nutritional needs or uniqueness; use of novel food ingredients and novel processing technologies.

Module – II

Stability of products; evaluation of shelf life; changes in quality attributes - sensory, nutritional, technological, microbial, statistical and packaging. Food regulation Act. Food sampling method: sampling and sample preparation: samplers, storage materials, preservatives, products analysis.

Module – III

Introduction to sensory evaluation – Type of sensory tests: Detection, threshold and dilution tests; Different tests for sensory evaluation – discrimination, descriptive, affective, flavor profile and ranking tests; Methods of sensory evaluation of different food products: Sensory and instrumental methods.

Module – IV

Selection of sensory panelists - general testing conditions - factors influencing sensory measurements - sensory quality parameters: size and shape, texture, aroma, taste, colour and gloss; designing of questionnaire and/or evaluation scorecard; consumer acceptability using sensory evaluation.

P.R.GOVT.COLLEGE (A), KAKINADA

CHOICE BASED CREDIT SYSTEM

FOOD SCIENCE SYLLABUS (Product development and quality evaluation)

SEMESTER – VI (PAPER-VIIB)

MODEL QUESTION PAPER

Time : 3 Hours. Marks: 60M

PART – I

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

SECTION – A

1. Describe the food product ,development and product design
2. Explain the changes in quality attributes.
3. Explain about the stability of products

SECTION – B

4. Write the different types sensory evaluation tests
5. Explain the sensory evaluation of different food products
6. Classify various sensory panelists.

PART – II

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

7. Traditional recipes recent development
8. Novel food ingredients
9. Food regulation Act
10. Quality attributes
11. Threshold dilution tests

PART – III

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

12. Food additives
13. Emulsifiers
14. Cost effectiveness
15. Stability of products
16. Packaging
17. Preservatives

P.R.GOVT.COLLEGE (A), KAKINADA

CHOICE BASED CREDIT SYSTEM

FOOD SCIENCE SYLLABUS (Product development and quality evaluation)

SEMESTER – VI (PAPER-VIIB)

BLUDE PRINT FOR QUESTION PAPER SETTERS

Hrs.: 3 **Marks : 60**

MODULE NO.	ESSAY QUESTIONS 10 MARKS	SHORT ANSWER QUESTIONS 4 MARKS	VERY SHORT ANSWER QUESTIONS 2 MARKS	MARKS ALLOTED TO THE UNIT
MODULE – I	01	02	02	22
MODULE – II	02	02	03	34
MODULE – III	02	02	03	34
MODULE – IV	01	02	04	26
Total no. of questions	06	08	12	
Total marks including choice				116

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

P.R.GOVT.COLLEGE (A), KAKINADA

CHOICE BASED CREDIT SYSTEM

FOOD SCIENCE SYLLABUS (*Product development and quality evaluation*)

SEMESTER – VI (PAPER-VIIB)

PRACTICAL SYLLABUS

LIST OF EXPERIMENTS:

1. Permutation combination method
2. Response surface methodology evaluation of product
3. Analysis of physical properties
4. Analysis of chemical properties sensory evaluation
5. Selection of panel
6. Threshold test collection and analysis of sensory data
7. Statistical analysis
8. Interpretation
9. Reporting

P.R.GOVT.COLLEGE (A), KAKINADA

CHOICE BASED CREDIT SYSTEM

FOOD SCIENCE SYLLABUS (Food Biotechnology)

SEMESTER – VI (CLUSTER-VIII A1)

SKILL BASED ELECTIVE – I

Hrs.:2 **Credits :3**

MODULE – I

Traditional applications of food biotechnology – Fermented foods: eg: dairy product, oriental fermentations, alcoholic beverages, and food ingredients. The role of biotechnology in fermented food products (dairy, meat, vegetable). Starter culture development, process development. Enzymes in the dairy industry: cheese making and whey processing, impact of enzyme technology. Enzymatic processing of fruit juices. Role of enzymes in baking, meat and meat processing.

MODULE – II

Prospectus of biotechnology – Definition, scope and applications. Application of biotechnology in food. Introduction to Genetics, Mendeleen genetics, population & Evolutionary genetics, Gene Mapping, Microbial gene transfer mechanisms. Mutation, types of mutations, molecular mechanism of mutations, practical applications, DNA repair mechanisms, recombinant DNA technology. Cell and tissue culture, micro – propagation. Nutrogenomics and nutraceuticals. Pre and probiotics.

MODULE – III

Genetic engineering in microbial cell. Concept of molecular cloning, plant and animal culture, transgenic plants, application of genetic engineering, biological role of DNA in cell metabolism, molecular genetics – fundaments of molecular biology with special reference to chemistry and biology and DNA (primary, secondary and tertiary) structure. Application to produce genetically modified foods.

MODULE – IV

Ethical issues concerning GM foods; testing for GMOs; current guidelines for the production, release and movement of GMOs; labeling and traceability; trade related aspects, biosafety, risk assessment and risk management. Public perception of GM foods. IPR – GMO Act – 2004.

P.R.GOVT.COLLEGE (A), KAKINADA

CHOICE BASED CREDIT SYSTEM

FOOD SCIENCE SYLLABUS (Food Biotechnology)

SEMESTER – VI (CLUSTER-VIII A1)

SKILL BASED ELECTIVE – I

PRACTICAL SYLLABUS

List of Experiments :

1. Alcohol production
2. Estimation of alcohols
3. Preparation of curd
4. DNA isolation
5. Genetic problems (mono hybrid and di hybrid)
6. Restriction digestion of DNA
7. Ligation of DNA
8. Bacterial transformation
9. Amylase enzyme activity

P.R.GOVT.COLLEGE (A), KAKINADA

CHOICE BASED CREDIT SYSTEM

FOOD SCIENCE SYLLABUS (Food Biotechnology)

SEMESTER – VI (CLUSTER-VIII A1)

MODEL QUESTION PAPER

Time : 3 Hours. Marks:60M

PART – I

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

SECTION – A

1. Write the role of biotechnology in fermented food products
2. Explain the starter culture development &process development
3. Explain the Mendelein genetics? Write about population of genetics.

SECTION – B

4. Explain the concept of molecular cloning
5. Write about application of genetic engineering
6. What are the genetically modified foods?

PART – II

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

7. Cheese making processing
8. Enzyme baking
9. Types of mutations
10. Recombinant DNA Technology
11. Genetic engineering in microbial cell

PART – III

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

12. Fermentation
13. Food ingredients
14. Meat processing
15. Probiotics
16. Genetics
17. Gene mapping

P.R.GOVT.COLLEGE (A), KAKINADA

CHOICE BASED CREDIT SYSTEM

FOOD SCIENCE SYLLABUS (Food Biotechnology)

SEMESTER – VI (CLUSTER-VIII A1)

BLUDE PRINT FOR QUESTION PAPER SETTERS

Hrs.: 3

Marks :

MODULE NO.	ESSAY QUESTIONS 10 MARKS	SHORT ANSWER QUESTIONS 4 MARKS	VERY SHORT ANSWER QUESTIONS 2 MARKS	MARKS ALLOTED T THE UNIT
MODULE – I	01	02	02	24
MODULE – II	02	02	03	34
MODULE – III	02	02	03	34
MODULE – IV	01	02	04	26
Total no. of questions	06	08	12	
Total marks including choice				116

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

P.R.GOVT.COLLEGE (A), KAKINADA

CHOICE BASED CREDIT SYSTEM

FOOD SCIENCE SYLLABUS (CLINICAL AND THERAPEUTIC NUTRITION)

SEMESTER – VI (CLUSTER-VIII A2)

Hrs.:2

Credits :3

MODULE – I

Introduction to Dietetics and types of diets

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 perenteral 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

P.R.GOVT.COLLEGE (A), KAKINADA

CHOICE BASED CREDIT SYSTEM

(FOOD SCIENCE SYLLABUS (Clinical and Therapeutic Nutrition)

SEMESTER – VI (CLUSTER-VIII A2)

MODEL QUESTION PAPER

Time: 3 Hours.
Marks: 60M

PART – I

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

SECTION – A

1. Describe the role of dietitian and scope of dietetics
2. Write the symptoms of cancer and explain the nutritional managements
3. Explain the causes of CHD and nutritional management

SECTION – B

4. Write the general principle and dietary management of renal diseases
5. Writ the etiology symptoms &Dietary management of peptic ulcer
6. Write the clinical manifestation consequence and dietary management of obesity

PART – II

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

7. Normal diet
8. Parenteral feeding
9. Nutritional management of diabetics
10. Nutritional management of hyper tension
11. Symptoms and dietary management of diarrhea

PART – III

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

12. Soft diet
13. HIV
14. Hypertension
15. Cirrhosis
16. Coma
17. Acute nephritis

P.R.GOVT.COLLEGE (A), KAKINADA

CHOICE BASED CREDIT SYSTEM

FOOD SCIENCE SYLLABUS (Clinical and Therapeutic Nutrition)

SEMESTER – VI (CLUSTER-VIII A2)

BLUE PRINT FOR QUESTION PAPER SETTERS

Time : 3 hours
Marks : 60

MODULE NO.	ESSAY QUESTIONS 10 MARKS	SHORT ANSWER QUESTIONS 4 MARKS	VERY SHORT ANSWER QUESTIONS 2 MARKS	MARKS ALLOTED TO THE UNIT
MODULE – I	01	02	02	22
MODULE – II	02	02	03	34
MODULE – III	02	02	03	34
MODULE – IV	01	02	04	26
Total no. of questions	06	08	12	
Total marks including choice				116

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

P.R.GOVT.COLLEGE (A), KAKINADA

CHOICE BASED CREDIT SYSTEM

FOOD SCIENCE SYLLABUS (Clinical and Therapeutic Nutrition)

SEMESTER – VI (CLUSTER-VIII A2)

SKILL BASED ELECTIVE – 2

PRACTICAL SYLLABUS

LIST OF EXPERIMENTS:

1. Planning and preparation of rehabilitation diets
2. Planning and preparation of diet for obesity and underweight conditions
3. Planning and preparation of diet for insulin and non insulin dependent diabetes mellitus
4. Planning and preparation of diet for gastrointestinal disorders
5. Planning and preparation of diet for cardiovascular disorders
6. Planning and preparation of diet for hepatic disorders
7. Planning and preparation of diet for pancreatic disorders
8. Planning and preparation of diet for renal disorders
9. Preparation of diet counseling aids for common disorders