

KHALSA COLLEGE AMRITSAR

-An Autonomous College

SYLLABUS

FOR

BACHELOR OF VOCATION

(FOOD PROCESSING)

PART I & II (Semester I TO IV)

FOR

Session 2021-22

PG DEPARTMENT OF FOOD SCIENCE & TECHNOLOGY

BACHELOR OF VOCATION (B.Voc.) FOOD PROCESSING

PART I & II (Semester I TO IV)

ORDINANCES FOR THE Bachelor of Vocation (B.Voc.) FOOD PROCESSING COURSE

ELIGIBILITY FOR ADMISSION IN B.VOC.

A candidate will be eligible to join 1st semester of Bachelor of Vocation(B.Voc.) Food Processing course, if he/she has passed 10+2 examination (any stream/ Arts/Science/Commerce) or any other examination recognized as equivalent thereto without reappear.

Bachelor of Vocation (B. Voc.) is launched under the scheme of University Grants Commission on skill development based higher education leading to Bachelor of Vocation (B. Voc.) Degree with multiple exits as Diploma/Advanced Diploma under the National Skill Qualification framework. The B.Voc. programme incorporates specific job roles and their National Occupational Standards along broad based general education. This course has been started in order to make education relevant and to create 'industry fit' skilled workforce. B. Voc. programme has been designed as per National Skill Qualification Framework emphasizing on skill based education.

NSQF LEVELS:

Name of the Course	NSQF Level Certificate	Cumulative Credits
Certificate	Level – 4	18 credits
Diploma	Level – 5	36 credits
Advanced Diploma	Level – 6	72 credits
B.Voc Degree	Level – 7	108 credits

Credit(C): A unit by which the course work is measured. It determines the number of hours of instructions required per week. One credit is equivalent to one hour of teaching (lecture or tutorial) or two hours of practical work/field work per week. Accordingly, one Credit would mean equivalent of 14-15 periods of 60 minutes each or 28 – 30 hrs of workshops / labs.

2. Scheme of Instructions-Examination

For each examination, every student admitted to the courses under the semester system must be on the rolls of the institution, and shall send his/her admission form and fees for the examination through the Principal/Head of the Institution, accompanied by the following certificates.

a) Of having attended at least 75% of the total number of lectures delivered in each theory and practical course separately. Deficiency in lectures may be condoned as per ordinances of college/University. If in particular semester, a student falls short of attendance in a maximum of two courses, he/she would be permitted to appear in the semester examination of the papers in which he/she fulfils the attendance requirements. The course/s in which the student does not fulfill the minimum attendance requirements, he/she shall not be permitted to appear in the semester examination of such course/s, and shall be declared as having failed in such course/s. A student who is falling short of attendance in maximum two courses, he/she shall be required to attend the minimum number of lectures which were falling short, during next year when the course/s is/are offered.

b) Of having good moral character.

c) The syllabi, courses of reading and regulations for the courses shall be notified by the college from time to time, and shall be deemed to constitute an integral part of ordinances. Course evaluation under the semester system of evaluation shall be done on marks basis. If a course has both the theory and practical components, the student will be required to pass both the components, separately. However, if the student fails in theory, but is passing in practical examination of that course, he/she will be required to clear the theory paper only, and vice-versa.

d) Carry on system for various semester examinations.

I. Courses having six semester duration:

a. There shall be no condition for promoting a student from first semester to second semester

b. However, the student shall be promoted to the third semester only if he/she has passed at least 50% courses/papers of the first two semesters.

c. There shall be no condition for promoting a student from third semester to fourth semester.

d. However a student shall be promoted to fifth semester only if he/she has passed atleast 50% courses/ papers of the first four semesters.

e. There shall be no condition for promoting a student from fifth semester to sixth semester. After a period of six semesters the student shall be given a period of two consecutive years to pass.

Note 1: No special chance or exemption shall be allowed beyond what is stated in the above Ordinances.

Note 2: Failing students shall appear in the examination in the regular semester examinations next year i.e. reappear of examination for an odd semester shall be conducted along with the next odd semester, and even semester along with the next even semester and there shall be no special supplementary examinations.

Note 3: If 50% of the courses/papers required to pass involve a fraction, the fraction of the course/paper will be treated as a full course. For example, if in a year there are 13 courses in two semesters, the candidate will be required to pass minimum of 7 courses/papers.

e) The pass marks for a course (paper) shall be 35% at Bachelor's Degree level. Pass marks in aggregate for all the courses shall be 40%. Re-evaluation shall be allowed as per ordinances.

If a candidate obtains less than 40% marks in aggregate at the end of final semester/year of his/her course but is pass in all individual papers, the result of such a candidate shall be declared as „fail“, and he/she shall be required to improve

his/her score in one or more papers in any of the semesters/year so as to obtain a minimum of 40% marks in aggregate to pass the examination.

f) **The medium of instructions shall be English.**

g) Grace marks will be allowed as per college/University ordinances.

3. Discipline

Each student shall be under the control and discipline of the concerned institution. In case of any misconduct on the part of a student, the institution shall have a power to take disciplinary action against the defaulter, to the extent of cancellation of admission of the defaulting student from the rolls of the institution.

4. Result-Division-Degree

The successful candidates shall be classified into the following divisions:

a) **First Division with distinction**-Those who obtain 75% or more marks at the end of their course.

b) **First Division**-Those who obtain 60% or more marks at the end of their course.

c) **Second Division**- Those who obtain 50% or more marks, but less than 60% marks at the end of their course.

d) **Third Division**- Those who obtain 40% or more marks, but less than 50% marks at the end of their course.

The successful candidate shall be awarded the degree in the subject of his/her study indicating the divisions obtained on the basis of the result of all the semester examinations. A student who does not complete the programme of study within the minimum duration of the course of his/her study, or fails in any course, shall not be eligible for any merit position/medal/award of the University.

COMPULSORY TRAINING

Training of one **month in relevant sector for completion of Diploma** and **1and half month for completion of advance Diploma** is mandatory. Report based on satisfactory/unsatisfactory shall be sent by Head of the Department.

INDUSTRIAL/INSTITUTIONAL PROJECT

A candidate shall have to undertake an Industrial/Institutional Project in college in the Final year (6thSemester) and submit the report for same by 30th April extendable to 30th May under special circumstances by the permission of the Head of concerned Department.

**P G DEPARTMENT OF FOOD SCIENCE & TECHNOLOGY
KHALSA COLLEGE AMRITSAR
SYLLABUS**

**Bachelor of Vocation (B.VOC.) FOOD PROCESSING SEMESTER – I
SESSION 2021-22
Study Scheme**

Semester I

Sr. No	Subject code	Subject	Credit Periods			Marks			
			T	P	Total Credits	Theor y	Practical	IntAsst	Total
GENERAL EDUCATION COMPONENT									
1	BVGC-101	Communication Skills in English-I	6	-	6	25	12	13	50
2	BVGC-102 A BVGC-102 B BVGC-102 C	Punjabi Compulsory OR *Basic Punjabi (<i>Mudhli</i> Punjabi) Punjab History & Culture	6	-	6	37	-	13	50
4	BVGC-103	**Drug Abuse-I	3	-	3	50	-	-	-
SKILL COMPONENT									
5	BVFP-104	Food Processing & Preservation	3	-	3	45	-	15	60
6	BVFP-105	Food and Nutrition	3	-	3	45	-	15	60
7	BVFP-106	Fruits and Vegetable Processing	3	-	3	45	-	15	60
8	BVFP-107	Experiments in Food Processing & Preservation	-	3	3	-	30	10	40
9	BVFP-108	Experiments in Food and Nutrition	-	3	3	-	30	10	40
10	BVFP-109	Experiments in Fruits and Vegetable Processing	-	3	3	-	30	10	40
		TOTAL							400

NSQF Level 4

***Paper in lieu of Punjabi Compulsory.**

****This paper marks will not be included in the total marks.(Qualifying paper)**

1 Credit = 1 hour/Theory OR Practical /week

Bachelor of Vocation (B.VOC.) FOOD PROCESSING SEMESTER – II
SESSION 2021-22

Semester II

Sr. No	Subject code	Subject	Credit Periods			Marks			
			T	P	Total Credits	Theory	Practical	IntAsst	Total
GENERAL EDUCATION COMPONENT									
1	BVGC-201	Communication Skills in English-II	6	-	6	25	12	13	50
2	BVGC-202 A BVGC-202 B BVGC-202 C	Punjabi Compulsory OR Basic Punjabi (<i>Mudhli</i> Punjabi) Punjab History & Culture	6	--	6	37	-	13	50
3	BVGC-203	**Drug Abuse-II	3	-	3	50	-	-	-
SKILL COMPONENT									
4	BVFP-204	Food Chemistry	3	-	3	45	-	15	60
5	BVFP-205	Food Hygiene & Sanitation	3	-	3	45	-	15	60
6	BVFP-206	Cereal Milling Technology	3	-	3	45	-	15	60
7	BVFP-207	Experiments in Food Chemistry	-	3	3	-	30	10	40
8	BVFP-208	Experiments in Food Hygiene & Sanitation	-	3	3	-	30	10	40
9	BVFP-209	Experiments in Cereal Milling Technology	-	3	3	-	30	10	40
10	BVFP-210	Industrial Training						Grade	Satisfactory/Unsatisfactory
		TOTAL							400

NSQF Level 5

***Paper in lieu of Punjabi Compulsory.**

****This paper marks will not be included in the total marks.(Qualifying paper)**

1 Credit = 1 hour/Theory OR Practical /week

Bachelor of Vocation (B.VOC.) FOOD PROCESSING SEMESTER – III
SESSION 2021-22

Semester III

Sr. No	Subject code	Subject	Credit Periods			Marks			
			T	P	Total Credits	Theory	Practical	Int Asst	Total
GENERAL EDUCATION COMPONENT									
3	BVGC-301	COMPUTER APPLICATIONS	3	-	3	45	-	15	60
2	BVGC-302	EXPERIMENTS IN COMPUTER APPLICATIONS	--	3	3	--	30	10	40
3	BVGC-303*	ENVIRONMENTAL STUDIES–I	3	-	3	37	-	13	50
SKILL COMPONENT									
4	BVFP-304	CEREALS AND PULSES TECHNOLOGY	3	-	3	45	-	15	60
5	BVFP-305	FOOD MICROBIOLOGY	3	-	3	45	-	15	60
6	BVFP-306	DAIRY TECHNOLOGY-I	3	-	3	45	-	15	60
7	BVFP-307	EXPERIMENTS IN CEREALS AND PULSES TECHNOLOGY	-	3	3	-	30	10	40
8	BVFP-308	EXPERIMENTS IN FOOD MICROBIOLOGY	-	3	3	-	30	10	40
9	BVFP-309	EXPERIMENTS IN DAIRY TECHNOLOGY-I	-	3	3	-	30	10	40
		TOTAL							400

***This paper marks will not be included in the total marks.(Qualifying paper)**

1 Credit = 1 hour/Theory OR Practical /week

Bachelor of Vocation (B.VOC.) FOOD PROCESSING SEMESTER – IV
SESSION 2021-22

Semester IV

Sr. No	Subject code	Subject	Credit Periods			Marks			
			T	P	Total Credits	Theory	Practical	IntAsst	Total
GENERAL EDUCATION COMPONENT									
1	BVGC-401	FOOD SAFETY AND LAWS	3	-	3	45		15	60
2	BVGC-402	EXPERIMENTS IN FOOD SAFETY AND LAWS	--	3	3	--	30	10	40
3	BVGC-403*	ENVIRONMENTAL STUDIES–II	3	-	3	37	-	13	50
SKILL COMPONENT									
4	BVFP-404	BAKERY AND CONFECTIONERY TECHNOLOGY	3	-	3	45	-	15	60
5	BVFP-405	DAIRY TECHNOLOGY-II	3	-	3	45	-	15	60
6	BVFP-406	FOOD PACKAGING	3	-	3	45	-	15	60
7	BVFP-407	EXPERIMENTS IN BAKERY AND CONFECTIONARY TECHNOLOGY	-	3	3	-	30	10	40
8	BVFP-408	EXPERIMENTS IN DAIRY TECHNOLOGY-II	-	3	3	-	30	10	40
9	BVFP-409	EXPERIMENTS IN FOOD PACKAGING	-	3	3	-	30	10	40
10	BVFP-410	INDUSTRIAL TRAINING							Satisfactory/Unsatisfactory
		TOTAL							400

NSQF 6

***This paper marks will not be included in the total marks.(Qualifying paper)**
1 Credit = 1 hour/Theory OR Practical /week

Bachelor of Vocation (B.Voc.) FOOD PROCESSING SEMESTER – I

SESSION 2021-22

BVGC-101 COMMUNICATIONS SKILLS IN ENGLISH-I

SESSION 2021-22

Bachelor of Vocation (B.Voc.)

(Software Development, Theatre and Stage Craft, Food Processing, Textile Design & Apparel Technology)

Semester – I

PAPER – BVGC 101: COMMUNICATION SKILLS IN ENGLISH-I

Time: 3 Hours

Max. Marks: 50

Theory Marks: 25

Practical Marks: 12

Assessment: 13

Instructions for the Paper Setters:-

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section. (5X5=25 Marks)

The syllabus is divided in four sections as mentioned below:

Section–A

Reading Skills: Reading Tactics and strategies; Reading purposes–kinds of purposes and associated comprehension.

Section–B

Reading for understanding concepts, details, coherence.

Activities:

- ☐ Short comprehension questions based on content and development of ideas

Section–C

Writing Skills: Writing styles for application, personal letter, official/ business letter.

Activities:

- ☐ Formatting personal and business letters.

Section–D

Resume, memo and notices; outline and revision.

Activities:

- ☐ Converting a biographical note into a sequenced resume or vice-versa
- ☐ Writing notices for circulation/boards

Recommended Books:

- ☐ *Oxford Guide to Effective Writing and Speaking* by John Seely.
- ☐ *English Grammar in Use* (Fourth Edition) by Raymond Murphy, CUP146

SESSION 2021-22
Bachelor of Vocation (B.Voc.)
(Software Development, Theatre and Stage Craft, Food Processing, Textile Design & Apparel Technology)

Semester – I

PAPER – BVGC 101: COMMUNICATION SKILLS IN ENGLISH-I

Practical Marks: 12

Course Contents:-

1. Assignment on selected topics in about 700-1000 words.
2. Comprehension passage

Questions:-

1. Handwritten Assignment should be submitted to the concerned teachers in a stick file.
2. Short comprehension questions based on unseen passage.

Note: Oral test will be conducted by external examiner with the help of internal examiner.

Bachelor of Vocation (B.Voc.) FOOD PROCESSING SEMESTER – I
SESSION 2021-22

BVGC-102 A PUNJABI COMPULSORY

B.Sc. (Hons. – Physics, Chemistry, Mathematics),

B.Sc. Bio-Tech./IT/Fashion Designing/Food Sc./BCA, BA-JMC/

B.Voc.(Software Development, Theatre and Stage Craft, Food Processing,
Textile Design & Apparel Technology)

ਸਮਾਂ : 3 ਘੰਟੇ

ਥਿਊਰੀ ਅੰਕ : 30

ਲਾਜ਼ਮੀ ਪੰਜਾਬੀ

ਇੰਟਰਨਲ ਅਸੈਸਮੈਂਟ : 10

ਕੁੱਲ ਅੰਕ : 40

ਪਾਠ-ਕ੍ਰਮ

ਭਾਗ-ਪਹਿਲਾ

ਸਾਹਿਤ ਦੇ ਰੰਗ (ਭਾਗ ਪਹਿਲਾ -ਕਵਿਤਾ ਅਤੇ ਕਹਾਣੀ) ਡਾ.ਮਹਿਲ ਸਿੰਘ (ਸੰਪਾ.), ਰਵੀ ਸਾਹਿਤ ਪ੍ਰਕਾਸ਼ਨ, ਅੰਮ੍ਰਿਤਸਰ।
(ਲੇਖਕ ਦਾ ਜੀਵਨ ਅਤੇ ਰਚਨਾ/ਸਾਰ/ਵਿਸ਼ਾ-ਵਸਤੂ)

ਭਾਗ-ਦੂਜਾ

ਇਤਿਹਾਸਿਕ ਯਾਦਾਂ -ਸ. ਸ. ਅਮੋਲ (ਸੰਪਾ.), ਕਸਤੂਰੀ ਲਾਲ ਐਂਡ ਸੰਨਜ਼, ਅੰਮ੍ਰਿਤਸਰ। (ਜੀਵਨੀ 9 ਤੋਂ ੯ ਤਕ ਸਾਰ/ ਵਿਸ਼ਾ-
ਵਸਤੂ/ਨਾਇਕ ਬਿੰਬ)

ਭਾਗ-ਤੀਜਾ

(ੳ) ਪੈਰਾ ਰਚਨਾ (ਤਿੰਨਾਂ ਵਿਚੋਂ ਇੱਕ)

(ਅ) ਪੈਰਾ ਪੜ੍ਹ ਕੇ ਪ੍ਰਸ਼ਨਾਂ ਦੇ ਉੱਤਰ

ਭਾਗ-ਚੌਥਾ

(ੳ) ਭਾਸ਼ਾ ਵੰਨਗੀਆਂ : ਭਾਸ਼ਾ ਦਾ ਟਕਸਾਲੀ ਰੂਪ, ਭਾਸ਼ਾ ਅਤੇ ਉਪ-ਭਾਸ਼ਾ ਵਿਚਲਾ ਅੰਤਰ, ਪੰਜਾਬੀ ਉਪ-ਭਾਸ਼ਾਵਾਂ ਦੇ
ਪਛਾਣ-ਚਿੰਨ੍ਹ

(ਅ) ਪੰਜਾਬੀ ਭਾਸ਼ਾ - ਨਿਕਾਸ ਤੇ ਵਿਕਾਸ

ਅੰਕ-ਵੰਡ ਅਤੇ ਪ੍ਰੀਖਿਅਕ ਲਈ ਹਦਾਇਤਾਂ

1. ਸਿਲੇਬਸ ਦੇ ਚਾਰ ਭਾਗ ਹਨ ਪਰ ਪ੍ਰਸ਼ਨ-ਪੱਤਰ ਦੇ ਪੰਜ ਭਾਗ ਹੋਣਗੇ।
2. ਪਹਿਲੇ ਚਾਰ ਭਾਗਾਂ ਵਿਚ 02-02 ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ। ਹਰੇਕ ਭਾਗ ਵਿਚੋਂ 01-01 ਪ੍ਰਸ਼ਨ ਕਰਨਾ ਲਾਜ਼ਮੀ ਹੋਵੇਗਾ।
ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦੇ ਬਰਾਬਰ (0੮) ਅੰਕ ਹੋਣਗੇ।
3. ਪ੍ਰਸ਼ਨ ਪੱਤਰ ਦੇ ਪੰਜਵੇਂ ਭਾਗ ਵਿਚ ਸਾਰੇ ਸਿਲੇਬਸ ਵਿਚੋਂ 01-01 ਅੰਕ ਦੇ ਛੇ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ, ਜਿਨ੍ਹਾਂ ਵਿਚੋਂ 0੫
ਪ੍ਰਸ਼ਨਾਂ ਦੇ ਉੱਤਰ ਦੇਣਾ ਲਾਜ਼ਮੀ ਹੋਵੇਗਾ।
4. ਪੇਪਰ ਸੈੱਟ ਕਰਨ ਵਾਲਾ ਜੇਕਰ ਚਾਹੇ ਤਾਂ ਪ੍ਰਸ਼ਨਾਂ ਦੀ ਵੰਡ ਅੱਗੋਂ ਵੱਧ ਤੋਂ ਵੱਧ ਚਾਰ ਉਪ-ਪ੍ਰਸ਼ਨਾਂ ਵਿਚ ਕਰ ਸਕਦਾ ਹੈ।

ਨੋਟ : ਇੰਟਰਨਲ ਅਸੈਸਮੈਂਟ 10 ਅੰਕਾਂ ਦੀ ਹੈ, ਜੋ ਕਾਲਜ ਵੱਲੋਂ ਨਿਰਧਾਰਿਤ ਦਿਸ਼ਾ ਨਿਰਦੇਸ਼ਾਂ ਅਨੁਸਾਰ ਇਨ੍ਹਾਂ ਅੰਕਾਂ ਤੋਂ ਵੱਖਰੀ
ਹੋਵੇਗੀ। ਇਸ ਪੇਪਰ ਦੇ ਕੁੱਲ ਅੰਕ 30+10 = 40 ਹਨ।

Bachelor of Vocation (B.Voc.) FOOD PROCESSING SEMESTER – I

SESSION 2021-22

BVGC-102 B BASIC PUNJABI

B.Sc. (Hons. – Physics, Chemistry, Mathematics),

B.Sc. Bio-Tech./IT/Fashion Designing/Food Sc./BCA, BA-JMC/

B.Voc.(Software Development, Theatre and Stage Craft, Food Processing,
Textile Design & Apparel Technology)

ਸਮਾਂ : 3 ਘੰਟੇ

SEMESTER-I

ਮੁੱਢਲੀ ਪੰਜਾਬੀ

ਬਿਊਰੀ ਅੰਕ : 37

(In Lieu of Compulsory Punjabi) ਇੰਟਰਨਲ ਅਸੈਸਮੈਂਟ : 13

ਕੁੱਲ ਅੰਕ : 40

ਪਾਠ-ਕ੍ਰਮ

ਭਾਗ-ਪਹਿਲਾ

ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਤੇ ਗੁਰਮੁਖੀ ਲਿਪੀ :

- (ੳ) ਨਾਮਕਰਣ ਤੇ ਸੰਖੇਪ ਜਾਣ-ਪਛਾਣ : ਗੁਰਮੁਖੀ ਵਰਣਮਾਲਾ, ਅੱਖਰ ਕ੍ਰਮ, ਸਵਰ ਵਾਹਕ (ੳ, ਅ, ਏ), ਲਗਾਂ-ਮਾਤਰਾਂ, ਪੈਰ ਵਿਚ ਬਿੰਦੀ ਵਾਲੇ ਵਰਣ, ਪੈਰ ਵਿਚ ਪੈਣ ਵਾਲੇ ਵਰਣ, ਬਿੰਦੀ, ਟਿੱਪੀ, ਅੱਧਕ
(ਅ) ਸਿਖਲਾਈ ਤੇ ਅਭਿਆਸ

ਭਾਗ-ਦੂਜਾ

ਗੁਰਮੁਖੀ ਆਰਥੋਗ੍ਰਾਫੀ ਅਤੇ ਉਚਾਰਨ :

ਸਵਰ, ਵਿਅੰਜਨ : ਮੁੱਢਲੀ ਜਾਣ-ਪਛਾਣ ਅਤੇ ਉਚਾਰਣ, ਮੁਹਾਰਨੀ, ਲਗ-ਮਾਤਰਾਂ ਦੀ ਪਛਾਣ

ਭਾਗ-ਤੀਜਾ

ਪੰਜਾਬੀ ਸ਼ਬਦ-ਜੋੜ :

ਮੁਕਤਾ (ਦੋ ਅੱਖਰਾਂ ਵਾਲੇ ਸ਼ਬਦ, ਤਿੰਨ ਅੱਖਰਾਂ ਵਾਲੇ ਸ਼ਬਦ), ਸਿਹਾਰੀ ਵਾਲੇ ਸ਼ਬਦ, ਬਿਹਾਰੀ ਵਾਲੇ ਸ਼ਬਦ, ਅੱਕੜ ਵਾਲੇ ਸ਼ਬਦ, ਦੁਲੈਂਕੜ ਵਾਲੇ ਸ਼ਬਦ, ਲਾਂ ਵਾਲੇ ਸ਼ਬਦ, ਦੁਲਾਵਾਂ ਵਾਲੇ ਸ਼ਬਦ, ਹੋੜੇ ਵਾਲੇ ਸ਼ਬਦ, ਕਨੋੜੇ ਵਾਲੇ ਸ਼ਬਦ, ਲਗਾਖਰ (ਬਿੰਦੀ, ਟਿੱਪੀ, ਅੱਧਕ) ਵਾਲੇ ਸ਼ਬਦ

ਭਾਗ-ਚੌਥਾ

ਸ਼ੁੱਧ-ਅਸ਼ੁੱਧ ਸ਼ਬਦ

ਅੰਕ-ਵੰਡ ਅਤੇ ਪ੍ਰੀਖਿਅਕ ਲਈ ਹਦਾਇਤਾਂ

ਪਹਿਲੇ ਭਾਗ ਵਿਚੋਂ ਚਾਰ ਵਰਣਨਾਤਮਕ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣ ਜਿਨ੍ਹਾਂ ਵਿਚੋਂ ਤਿੰਨ ਪ੍ਰਸ਼ਨਾਂ ਦਾ ਉੱਤਰ ਦੇਣਾ ਲਾਜ਼ਮੀ ਹੈ। ਹਰ ਪ੍ਰਸ਼ਨ ਦੇ ਚਾਰ-ਚਾਰ ਅੰਕ ਹਨ। (3*8)=24 ਅੰਕ

1. ਭਾਗ ਦੂਸਰਾ ਵਿਚੋਂ ਦੋ-ਦੋ ਅੰਕ ਦੇ ਪੰਜ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣ। ਸਾਰੇ ਪ੍ਰਸ਼ਨ ਲਾਜ਼ਮੀ ਹਨ। (2*5)=10 ਅੰਕ
2. ਭਾਗ ਤੀਸਰਾ ਵਿਚੋਂ ਤਿੰਨ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣ ਜਿਨ੍ਹਾਂ ਵਿਚੋਂ ਦੋ ਪ੍ਰਸ਼ਨ ਹੱਲ ਕਰਨੇ ਲਾਜ਼ਮੀ ਹਨ। ਇਨ੍ਹਾਂ ਦੇ ਪੰਜ-ਪੰਜ ਅੰਕ ਹਨ। (2*5)=10 ਅੰਕ
3. ਭਾਗ ਚੌਥਾ ਵਿਚ ਪੰਜ ਅਸ਼ੁੱਧ ਸ਼ਬਦਾਂ ਨੂੰ ਸ਼ੁੱਧ ਕਰਕੇ ਲਿਖਣਾ ਹੋਵੇਗਾ। (5*2)=10 ਅੰਕ

(ਪਣ੧)=04 ਅੰਕ

Bachelor of Vocation (B.Voc.) FOOD PROCESSING SEMESTER – I

SESSION 2021-22

BVGC-102 C PUNJAB HISTORY & CULTURE

KHALSA COLLEGE AMRITSAR

(An Autonomous College)

Bachelor of Vocation (B.Voc.) Software Development, Theatre and Stage Craft, Food Processing, Textile Design & Apparel Technology),

B. A., B.A. (SS), B. A. (Hons. – English), B. Com. (Hons., R, Ac. & Finance), B. Sc.

Agri./Bio-Tech./Comp. Sc./Eco./FD/Food Sc./IT/Med./NMed., B.Sc. (Hons. –

Agri./Botany, Chemistry, Mathematics, Physics, Zoology)/ B. of Mult., B. in Int. & Mob.

Tech./BBA/BCA/BJMC/BPT-SEMESTER-I

PUNJAB HISTORY & CULTURE (From Earliest Times to C 320)

(Special Paper in lieu of Punjabi compulsory)

(For those students who are not domicile of Punjab)

Time: 3 Hours

Total. Marks: 50

Theory: 37

Internal Assessment: 13

Instructions for the Paper Setter:

The question paper consists of five units: I, II, III, IV and V. Units I, II, III and IV will have two questions each. Each question carries 8 marks. The students are to attempt one question from each unit approximately in 800 words. Unit-V consists of 7 short answer type questions to be set from the entire syllabus. Students are to attempt any 5 questions in about 20 words each. Each question carries 1 mark.

Note: The examiner is to set the question paper in two languages: English & Hindi.

Unit-I

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

Unit-II

3. Harappan Civilization: Town planning; social, economic and religious life of the Indus Valley People.
4. The Indo-Aryans: Original home and settlement in Punjab.

Unit-III

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

Unit-IV

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

Suggested Readings:-

1. L. Joshi (ed), History and Culture of the Punjab, Art-I, Patiala, 1989 (3rd edition)
2. L.M. Joshi and Fauja Singh (ed), History of Punjab, Vol.I, Patiala 1977.
3. Budha Parkash, Glimpses of Ancient Punjab, Patiala, 1983.
4. B.N. Sharma, Life in Northern India, Delhi. 196

Bachelor of Vocation (B.Voc.) FOOD PROCESSING SEMESTER – I

SESSION 2021-22

BVGC-103 DA-1 DRUG ABUSE

B.Voc. Food Processing Semester - I

(DA1- Drug Abuse: Problem, Management and Prevention)

PROBLEM OF DRUG ABUSE

(Compulsory for all Under Graduate Classes)

Time: 3 Hours

Max. Marks: 50

Instructions for the Paper Setters:

Section–A: (15 Marks): It will consist of five short answer type questions. Candidates will be required to attempt three questions, each question carrying 05 marks. Answer to any of the questions should not exceed two pages.

Section–B: (20 Marks) It will consist of four essay type questions. Candidates will be required to attempt two questions, each question carrying 10 marks. Answer to any of the questions should not exceed four pages.

Section–C: (15 Marks) It will consist of two questions. Candidate will be required to attempt one question only. Answer to the question should not exceed 5 pages.

UNIT–I

- **Meaning of Drug Abuse**

Meaning, Nature and Extent of Drug Abuse in India and Punjab.

UNIT-II

- **Consequences of Drug Abuse for:**

Individual : Education, Employment, Income.

Family : Violence.

Society : Crime.

Nation : Law and Order problem.

UNIT-III

- **Management of Drug Abuse**

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

UNIT-IV

- Psychiatric Management: Counseling, Behavioral and Cognitive therapy.
- Social Management: Family, Group therapy and Environmental Intervention.

Books Recommended:

1. Ahuja, Ram (2003), Social Problems in India, Rawat Publication, Jaipur.
2. Extent, Pattern and Trend of Drug Use in India, Ministry of Social Justice and Empowerment, Government of India, 2004.
3. Inciardi, J.A. 1981. The Drug Crime Connection. Beverly Hills: Sage Publications. 23
4. Jasjit Kaur Randhawa & Samreet Randhawa, "Drug Abuse-Problem, Management & Prevention", KLS, ISBN No. 978-81-936570-6-5, (2018).
5. Jasjit Kaur Randhawa & Samreet Randhawa, "Drug Abuse Problem, Management & Prevention", KLS, ISBN No. 978-81-936570-8-9, (2019).
6. Jasjit Kaur Randhawa & Samreet Randhawa, "voZrI d[otos'A^(BPky'oh) ;wZf;nk, gqpzXB ns/ o'eEkw", KLS, ISBN No. 978-81-936570-7-1, (2018).
7. Jasjit Kaur Randhawa, "Drug Abuse -Management & Prevention", KLS, ISBN No. 978-93-81278-80-2, (2018).
8. Kapoor. T. (1985) Drug epidemic among Indian Youth, New Delhi: Mittal Pub.
9. Modi, Ishwar and Modi, Shalini (1997) Drugs: Addiction and Prevention, Jaipur: Rawat Publication.
10. National Household Survey of Alcohol and Drug abuse. (2003) New Delhi, Clinical Epidemiological Unit, All India Institute of Medical Sciences, 2004.
11. Rama Gandotra & Jasjit Kaur Randhawa, "voZrI d[otos'A^(BPky'oh) gqpzXB ns/ o'eEkw", KLS, ISBN No. 978-93-81278-87-1, (2018).
12. Sain, Bhim 1991, Drug Addiction Alcoholism, Smoking obscenity New Delhi: Mittal Publications.
13. Sandhu, Ranvinder Singh, 2009, Drug Addiction in Punjab: A Sociological Study. Amritsar: Guru Nanak Dev University.
14. Singh, Chandra Paul 2000. Alcohol and Dependence among Industrial Workers: Delhi: Shipra.
15. Sussman, S and Ames, S.L. (2008). Drug Abuse: Concepts, Prevention and Cessation, Cambridge University Press.
16. World Drug Report 2010, United Nations office of Drug and Crime.
17. World Drug Report 2011, United Nations office of Drug and Crime.

Bachelor of Vocation (B.VOC.) FOOD PROCESSING SEMESTER – I

SESSION 2021-22

BVFP-104 FOOD PROCESSING AND PRESERVATION

Time: 3 Hours

Max. Marks: 60

Theory Marks: 45

Internal Marks: 15

Instructions for the Paper Setters:

Theory: – Question paper will contain eight questions in all and students will be asked to attempt five questions. All questions will carry equal marks. Question no. 1 will be objective type and compulsory.

Theory:

UNIT-I

Definition, scope and benefit of industrial food preservation, sources of food, Causes of quality deterioration of foods, Principles of Food Processing and Preservation.

UNIT-II

Thermal Processing Methods of preservation – Principles of Pasteurization and sterilization, canning and aseptic processing – definition and flowsheet diagram.

Preservation by low temperature – Principle of Refrigeration and freezing, methods of freezing.

Preservation by drying and dehydration – Principle, importance and methods – cabinet drier, fluidized bed drier, spray drier, vacuum shelf drier, drum drier and freeze driers.

UNIT-III

Class-I and Class-II preservatives and their mode of action- Salt, sugar, acetic acid, sodium benzoate, potassium metabisulphite and potassium sorbate.

Microwave Processing – Properties, mechanism and working.

Irradiation: Sources, mechanism and effect on microorganisms.

Recent methods in Processing : Principle and effect on microorganism by Pulsed electric field processing, High pressure processing, Processing using ultrasound and ohmic heating.

Books Recommended:

1. Food Processing Technology. Principles and Practice. P J Fellows. A volume in Woodhead Publishing Series in Food Science, Technology and Nutrition Book, 2017 Fourth Edition.
2. Food Science. Norman N. Potter. Edition, 5. Publisher, 2007, CBS Publishers & Distributors.
3. Physical Principles of Food Preservation. Marcus Karel, Owen R. Fennema, Daryl B. Lund. M. Dekker, 1975 Dekker Inc. New York. Vol II.
4. The technology of food preservation by N.W. Desrosier and J.N. Desrosier, CBS publishing.

Bachelor of Vocation (B.VOC.) FOOD PROCESSING SEMESTER – I
SESSION 2021-22
BVFP-105 Food and Nutrition

Time: 3 Hours

Max. Marks: 60
Theory Marks: 45
Internal Marks: 15

Instructions for the Paper Setters:

Theory: – Question paper will contain eight questions in all and students will be asked to attempt five questions. All questions will carry equal marks. Question no. 1 will be objective type and compulsory.

Theory:

UNIT I

Definitions: Food, Nutrition, Balanced diet and Malnutrition- Under nutrition & Over nutrition
Functions of Food, Five Food groups.
Functions of nutrients-Carbohydrates, Fats, Proteins, Vitamins, Minerals
Water & Electrolytes- Functions, sources and their balance; Acid-base balance
Dietary fibre- its functions and sources

UNIT II

Energy, Calorific value of food, Energy value of Carbohydrates, Fats & Proteins
Basal Metabolism Rate (BMR), Factors affecting BMR
RDA (Recommended daily allowances) for infants, children, Adults and Pregnant women.
Meal Planning- Food Guide, Objectives in meal planning, Meal Planning process

UNIT III

Disorders of Nutrition: Protein-Energy Malnutrition (PEM), Marasmus & kwashiorkor Deficiency diseases of vitamins-Night blindness, Beri-Beri, Pellagra, Scurvy and Rickets.
Deficiency diseases of minerals-Anaemia and goitre
Diet therapy - Normal hospital diet, Liquid and soft diets, Tube feeding.
Definitions of Obesity and BMI, under-weight, over-weight. Factors Responsible for Obesity,
Dietary management during obesity and under-weight, Fad Diets

Books Recommended:

1. **Handbook of Food and Nutrition:** by M. Swami Nathan Vol. I, II.2012,Banglore Printing and Publishing.
2. Nutrition and Dietetics by Shubhangini A. Joshi. 1995, McGraw Hill Education (India) Pvt. Ltd, New Delhi.
3. Fundamentals of Foods, Nutrition and Diet Therapy by S.R. Mudambi& M.V. Rajagopal,2012 New Age International Pvt. Ltd. Publishers. New Delhi.

Bachelor of Vocation (B.Voc.) FOOD PROCESSING SEMESTER – I

SESSION 2021-22

BVFP-106 FRUITS AND VEGETABLE PROCESSING

Time: 3 Hours

Max. Marks: 60

Theory Marks: 45

Internal Marks: 15

Instructions for the Paper Setters:

Theory: – Question paper will contain eight questions in all and students will be asked to attempt five questions. All questions will carry equal marks. Question no. 1 will be objective type and compulsory.

Theory:

UNIT-I

Chemical composition and nutritive value of fruits and vegetables, Storage practices: Modified & Controlled atmospheric storage, hypobaric storage, cool store.

concept of Primary processing: grading, sorting, cleaning, washing, peeling, slicing and blanching.

Processing of fruit juices and beverages - RTS, Squash, crush and fruit juice concentrates.

UNIT-II

Canning of fruits and vegetables – Basic requirements, process and machinery.

Processing of Jam, jelly, preserve, candied, glazed fruits and pickles- Basic requirements, process and machinery.

UNIT-III

Processing of potatoes – chips, wedges and dried flakes.

Processing techniques of tomatoes – Juice, puree, paste and ketchup.

Drying/Dehydration and freezing of fruits and vegetables: Principle and methods.

Books Recommended:

1. Handbook of Analysis of Fruits and Vegetable Products by S. Rangana, Tata McGraw Hill, New Delhi, 1986.
2. Preservation of Fruits and Vegetables by Lal G, Siddapa GS & Tandon GL. 1986. ICAR.
3. Storage, Processing and Nutritional Quality of Fruits and Vegetables. Vol. I. Fruits and Vegetables by Salunkhe DK, Bolia HR & Reddy NR. 1991. CRC Press.
4. Post Harvest Technology of Fruits and Vegetables by Verma LR. & Joshi VK. 2000. Indus Publ.

Bachelor of Vocation (B.Voc.) FOOD PROCESSING SEMESTER – I

SESSION 2021-22

BVFP-107 EXPERIMENTS IN FOOD PROCESSING AND PRESERVATION

Time: 3 Hours

Max. Marks: 40

Practical Marks: 30

Internal Marks: 10

Instructions for the Paper Setters:

Practical – Question Paper will be set with the mutual consent of Internal and External Examiners on the spot.

1. Demonstration of various machineries used in food processing.
2. Demonstration of various perishable food items and degree of spoilage.
3. Blanching of selected food items.
4. To study the effectiveness of pasteurization.
5. To study the Pasteurization of milk by microwave technique.
6. To study the effect of browning on raw fruits & vegetables.
7. Preservation of food by concentration.
8. To perform cut out analysis of canned product.
9. Preservation of food by using chemical preservatives.
10. To study different methods of food processing i.e. by heat & drying in tray drier on a given food sample.
11. Demonstration of preserving foods under cold v/s freezing process.
12. Visit to any Food Processing Industry.

Books Recommended:

1. Handbook of Analysis and Quality Control for Fruit and Vegetable Products by S Ranganna, 1986, Tata Mc Graw Hill Education.
2. Food Science Experiments and Applications by M. Sethi, 2019, CBS Publishers & Distributors.

Bachelor of Vocation (B.Voc.) FOOD PROCESSING SEMESTER – I

SESSION 2021-22

BVFP-108 Experiments in Food and Nutrition

Time: 3 Hours

Max. Marks: 40

Practical Marks: 30

Internal Marks: 10

Instructions for the Paper Setters:

Practical – Question Paper will be set with the mutual consent of Internal and External Examiners on the spot.

Practicals:

1. Identification of food sources for various nutrients.
2. Identification of five-food groups
3. Calorific value of food
4. Calculation of BMI
5. Calculation of BMR
6. Evaluation of own diet.
7. Diet planning of a normal adult
8. Planning of diet for obese and overweight people
9. Planning of diet for Under-weight people.

Books Recommended:

1. Fundamentals of Foods, Nutrition and Diet Therapy by S.R. Mudambi & M.V. Rajagopal, 2012 New Age International Pvt. Ltd. Publishers. New Delhi.

Bachelor of Vocation (B.Voc.) FOOD PROCESSING SEMESTER – I

SESSION 2021-22

BVFP-109 Experiments in Fruits and Vegetable Processing

Time: 3 Hours

Max. Marks: 40

Practical Marks: 30

Internal Marks: 10

Instructions for the Paper Setters:

Practical – Question Paper will be set with the mutual consent of Internal and External Examiners on the spot.

1. Extraction and preservation of Fruit Juices.
2. Preparation of fruit jam and jellies
3. Preparation of RTS and squash from fruit juices.
4. To prepare different types of pickles (sweet & sour).
5. Drying by different methods of fruits and vegetables.
6. Preparation of tomato ketchup, sauce & chutney.
7. Preparation of potato chips, finger chips.
8. Preparation of preserve and candied fruits and vegetables.
9. Organoleptic evaluation of fruit & vegetable products.
10. Determination of total soluble solids by refractrometer.
11. Determination of Brix : Acid ratio of fruits and vegetable products.
12. To study the estimation of pigments in fruits and vegetables by using spectrophotometer.
13. Visit to a fruits and vegetable Processing Industry.

Books Recommended:

3. Handbook of Analysis and Quality Control for Fruit and Vegetable Products by S Ranganna, 1986 Tata Mc Graw Hill Education.
4. Food Science Experiments and Applications by M. Sethi, 2019, CBS Publishers & Distributors.

Bachelor of Vocation (B.Voc.) FOOD PROCESSING SEMESTER – II
SESSION 2021-22
BVGC-201 COMMUNICATIONS SKILLS IN ENGLISH – II

SESSION 2021-22
Bachelor of Vocation (B.Voc.)
(Software Development, Theatre and Stage Craft, Food Processing, Textile Design & Apparel Technology)
Semester – II

PAPER – BVGC 201: COMMUNICATION SKILLS IN ENGLISH – II

PAPER – BVGC 201: COMMUNICATION SKILLS IN ENGLISH – II

Time: 3 Hours

Max. Marks: 50

Theory Marks: 25

Practical Marks: 12

Assessment: 13

Instructions for the Paper Setters:-

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section. (5X5=25 Marks)

Course Contents:

SECTION – A

Listening Skills: Barriers to listening; effective listening skills.

Activities: Listening exercises- News and TV reports

SECTION – B

Attending telephone calls; notemaking.

Activities: Taking notes on a speech/lecture

SECTION – C

Speaking and Conversational Skills: Components of a meaningful and easy conversation; understanding the cue and making appropriate responses; forms of polite speech; asking and providing information on general topics.

Activities: 1) Making conversation and taking turns

2) Oral description or explanation of a common object, situation or concept

SECTION – D

Situation based Conversation in English, Essentials of Spoken English

Activities: Giving Interviews

Recommended Books:

- ❓ *Oxford Guide to Effective Writing and Speaking* by John Seely.
- ❓ *English Grammar in Use* (Fourth Edition) by Raymond Murphy, CUP14

SESSION 2021-22
Bachelor of Vocation (B.Voc.)
(Software Development, Theatre and Stage Craft, Food Processing, Textile Design & Apparel
Technology)
Semester – II

Practical Marks: 12

Course Contents:-

3. Oral Presentation with/without audio visualaids.
4. GroupDiscussion.
5. Listening to any recorded or live material and asking oral questions for listening comprehension.

Questions:-

3. Oral Presentation will be of 5 to 10 minutes duration (Topic can be given in advance or itcanbe student's own choice). Use of audio visual aids is desirable.
4. Group discussion comprising 8 to 10 students on a familiar topic. Time for each group will be 15 to 20minutes.

Note: Oral test will be conducted by external examiner with the help of internal examiner.

Bachelor of Vocation (B.Voc.) FOOD PROCESSING SEMESTER – II
SESSION 2021-22
BVGC-202 A PUNJABI COMPULSORY
B.Sc. (Hons. – Physics, Chemistry, Mathematics),
B.Sc. Bio-Tech./IT/Fashion Designing/Food Sc./BCA, BA-JMC/
B.Voc. (Software Development, Theatre and Stage Craft, Food Processing,
Textile Design & Apparel Technology)

SEMESTER-II
ਲਾਜ਼ਮੀ ਪੰਜਾਬੀ

ਸਮਾਂ : ੩ ਘੰਟੇ

ਬਿਊਰੀ ਅੰਕ :

੩੭

ਇੰਟਰਨਲ ਅਸੈਸਮੈਂਟ : ੧੩

ਕੁੱਲ ਅੰਕ : ੫੦

ਪਾਠ-ਕ੍ਰਮ

ਭਾਗ-ਪਹਿਲਾ

ਸਾਹਿਤ ਦੇ ਰੰਗ (ਭਾਗ ਦੂਜਾ - ਵਾਰਤਕ ਅਤੇ ਰੋਖਾ-ਚਿੱਤਰ) ਡਾ. ਮਹਿਲ ਸਿੰਘ (ਸੰਪਾ.), ਰਵੀ ਸਾਹਿਤ ਪ੍ਰਕਾਸ਼ਨ, ਅੰਮ੍ਰਿਤਸਰ।
(ਕਿਸੇ ਲੇਖ ਅਤੇ ਰੋਖਾ-ਚਿੱਤਰ ਦਾ ਸਾਰ/ਵਿਸ਼ਾ-ਵਸਤੂ/ਨਾਇਕ ਬਿੰਬ)

ਭਾਗ-ਦੂਜਾ

ਇਤਿਹਾਸਿਕ ਯਾਦਾਂ -ਸ. ਸ. ਅਮੋਲ (ਸੰਪਾ.), ਕਸਤੂਰੀ ਲਾਲ ਐਂਡ ਸੰਨਜ਼, ਅੰਮ੍ਰਿਤਸਰ। (ਜੀਵਨੀ ੧੦ ਤੋਂ ੧੮ ਤਕ ਵਿਸ਼ਾ-
ਵਸਤੂ/ਸਾਰ/ਨਾਇਕ ਬਿੰਬ)

ਭਾਗ-ਤੀਜਾ

(ੳ) ਸ਼ਬਦ-ਸ਼ਣਤਰ ਅਤੇ ਸ਼ਬਦ-ਰਚਨਾ - ਪਰਿਭਾਸ਼ਾ ਅਤੇ ਮੁੱਢਲੇ ਸੰਕਲਪ
(ਅ) ਸ਼ਬਦ-ਸ਼੍ਰੇਣੀਆਂ

ਭਾਗ-ਚੌਥਾ

(ੳ) ਦਫ਼ਤਰੀ ਚਿੱਠੀ ਪੱਤਰ
(ਅ) ਮੁਹਾਵਰੇ ਅਤੇ ਅਖਾਣ

ਅੰਕ-ਵੰਡ ਅਤੇ ਪ੍ਰੀਖਿਅਕ ਲਈ ਹਦਾਇਤਾਂ

1. ਸਿਲੇਬਸ ਦੇ ਚਾਰ ਭਾਗ ਹਨ ਪਰ ਪ੍ਰਸ਼ਨ-ਪੱਤਰ ਦੇ ਪੰਜ ਭਾਗ ਹੋਣਗੇ।
2. ਪਹਿਲੇ ਚਾਰ ਭਾਗਾਂ ਵਿਚ ੦੨-੦੨ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ। ਹਰੇਕ ਭਾਗ ਵਿਚੋਂ ੦੧-੦੧ ਪ੍ਰਸ਼ਨ ਕਰਨਾ ਲਾਜ਼ਮੀ ਹੋਵੇਗਾ।
ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦੇ ਬਰਾਬਰ (੦੮) ਅੰਕ ਹੋਣਗੇ।
3. ਪ੍ਰਸ਼ਨ ਪੱਤਰ ਦੇ ਪੰਜਵੇਂ ਭਾਗ ਵਿਚ ਸਾਰੇ ਸਿਲੇਬਸ ਵਿਚੋਂ ੦੧-੦੧ ਅੰਕ ਦੇ ਛੇ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ, ਜਿਨ੍ਹਾਂ ਵਿਚੋਂ ੦੫
ਪ੍ਰਸ਼ਨਾਂ ਦੇ ਉੱਤਰ ਦੇਣਾ ਲਾਜ਼ਮੀ ਹੋਵੇਗਾ।
4. ਪੇਪਰ ਸੈੱਟ ਕਰਨ ਵਾਲਾ ਜੇਕਰ ਚਾਹੇ ਤਾਂ ਪ੍ਰਸ਼ਨਾਂ ਦੀ ਵੰਡ ਅੱਗੋਂ ਵੱਧ ਤੋਂ ਵੱਧ ਚਾਰ ਉਪ-ਪ੍ਰਸ਼ਨਾਂ ਵਿਚ ਕਰ ਸਕਦਾ ਹੈ।

ਨੋਟ : ਇੰਟਰਨਲ ਅਸੈਸਮੈਂਟ ੧੩ ਅੰਕਾਂ ਦੀ ਹੈ, ਜੋ ਕਾਲਜ ਵੱਲੋਂ ਨਿਰਧਾਰਤ ਦਿਸ਼ਾ ਨਿਰਦੇਸ਼ਾਂ ਅਨੁਸਾਰ ਇਨ੍ਹਾਂ ਅੰਕਾਂ ਤੋਂ ਵੱਖਰੀ
ਹੋਵੇਗੀ। ਇਸ ਪੇਪਰ ਦੇ ਕੁੱਲ ਅੰਕ ੩੭+੧੩ = ੫੦ ਹਨ।

Bachelor of Vocation (B.Voc.) FOOD PROCESSING SEMESTER - II
SESSION 2021-22
BVGC-202 B BASIC PUNJABI
B.Sc. (Hons. - Physics, Chemistry, Mathematics), B.Sc.
BioTech./IT/Fashion Designing/Food Sc./BCA, BA-JMC/B.Voc. (Software
Development, Theatre and Stage Craft, Food Processing, Textile Design & Apparel
Technology)

SEMESTER-II
ਮੁੱਢਲੀ ਪੰਜਾਬੀ
(In Lieu of Compulsory Punjabi)

ਸਮਾਂ : ੩ ਘੰਟੇ ਬਿਊਰੀ ਅੰਕ : ੩੭
ਇੰਟਰਨਲ ਅਸੈਸਮੈਂਟ : ੧੩
ਕੁੱਲ ਅੰਕ : ੫੦

ਪਾਠ-ਕ੍ਰਮ

ਭਾਗ-ਪਹਿਲਾ

ਪੰਜਾਬੀ ਸ਼ਬਦ-ਬਣਤਰ :

ਧਾਤੂ, ਵਧੇਤਰ (ਅਗੇਤਰ, ਮਧੇਤਰ, ਪਿਛੇਤਰ), ਪੰਜਾਬੀ ਕੋਸ਼ਗਤ ਸ਼ਬਦ ਅਤੇ ਵਿਆਕਰਨਕ ਸ਼ਬਦ

ਭਾਗ-ਦੂਜਾ

ਪੰਜਾਬੀ ਸ਼ਬਦ-ਪ੍ਰਕਾਰ :

(ੳ) ਸੰਯੁਕਤ ਸ਼ਬਦ, ਸਮਾਸੀ ਸ਼ਬਦ, ਦੋਜਾਤੀ ਸ਼ਬਦ, ਦੋਹਰੇ/ਦੁਹਰੁਕਤੀ ਸ਼ਬਦ ਅਤੇ ਮਿਸ਼ਰਤ ਸ਼ਬਦ।
(ਅ) ਸਿਖਲਾਈ ਤੇ ਅਭਿਆਸ

ਭਾਗ-ਤੀਜਾ

ਪੰਜਾਬੀ ਸ਼ਬਦ-ਰਚਨਾ :

ਇੱਕ-ਵਚਨ ਬਹੁ-ਵਚਨ, ਲਿੰਗ-ਪੁਲਿੰਗ, ਬਹੁਅਰਥਕ ਸ਼ਬਦ, ਸਮਾਨਅਰਥਕ ਸ਼ਬਦ, ਬਹੁਤੇ ਸ਼ਬਦਾਂ ਲਈ ਇੱਕ ਸ਼ਬਦ,
ਸ਼ਬਦ ਜੁੱਟ, ਵਿਰੋਧਅਰਥਕ ਸ਼ਬਦ, ਸਮਨਾਮੀ ਸ਼ਬਦ

ਭਾਗ-ਚੌਥਾ

ਨਿੱਤ ਵਰਤੋਂ ਦੀ ਪੰਜਾਬੀ ਸ਼ਬਦਾਵਲੀ :

ਪਾਣ-ਪੀਣ, ਸਾਕਾਦਾਰੀ, ਰੁੱਤਾਂ, ਮਹੀਨਿਆਂ, ਗਿਣਤੀ, ਮੌਸਮ, ਬਾਜ਼ਾਰ, ਵਪਾਰ, ਚੰਦਿਆਂ ਨਾਲ ਸੰਬੰਧਿਤ

ਅੰਕ-ਵੰਡ ਅਤੇ ਪ੍ਰੀਖਿਅਕ ਲਈ ਹਦਾਇਤਾਂ

1. ਭਾਗ ਪਹਿਲਾਂ ਵਿਚੋਂ ਚਾਰ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣ ਜਿਨ੍ਹਾਂ ਵਿਚੋਂ ਤਿੰਨ ਪ੍ਰਸ਼ਨਾਂ ਦਾ ਉੱਤਰ ਦੇਣੇ ਲਾਜ਼ਮੀ ਹਨ। ਹਰ ਪ੍ਰਸ਼ਨ ਦੇ ਚਾਰ-ਚਾਰ ਅੰਕ ਹਨ। (੩੮੪)=੧੨ ਅੰਕ
2. ਭਾਗ ਦੂਸਰਾ ਵਿਚੋਂ ਦੋ-ਦੋ ਅੰਕ ਦੇ ਪੰਜ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣ। ਸਾਰੇ ਪ੍ਰਸ਼ਨ ਲਾਜ਼ਮੀ ਹਨ। (੫੮੨)=੧੦ ਅੰਕ
3. ਭਾਗ ਤੀਸਰਾ ਵਿਚੋਂ ਚਾਰ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣ ਜਿਨ੍ਹਾਂ ਵਿਚੋਂ ਦੋ ਪ੍ਰਸ਼ਨ ਹੱਲ ਕਰਨੇ ਲਾਜ਼ਮੀ ਹਨ। (੨੮੫)=੧੦ ਅੰਕ
4. ਭਾਗ ਚੌਥਾ ਵਿਚੋਂ ਦੋ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣ ਜਿਨ੍ਹਾਂ ਵਿਚੋਂ ਇਕ ਪ੍ਰਸ਼ਨ ਹੱਲ ਕਰਨਾ ਹੋਵੇਗਾ। (੧੮੫)=੦੫ ਅੰਕ

Bachelor of Vocation (B.Voc.) FOOD PROCESSING SEMESTER – II

SESSION 2021-22

BVGC-202 C PUNJAB HISTORY & CULTURE

KHALSA COLLEGE AMRITSAR

(An Autonomous College)

Bachelor of Vocation (B.Voc.) Software Development, Theatre and Stage Craft, Food Processing, Textile Design & Apparel Technology),

B. A., B.A. (SS), B. A. (Hons. – English), B. Com. (Hons., R, Ac. & Finance), B. Sc. Agri./Bio-Tech./Comp. Sc./Eco./FD/Food Sc./IT/Med./NMed., B.Sc. (Hons. – Agri., Botany, Chemistry, Mathematics, Physics, Zoology)/ B. of Mult., B. in Int. & Mob.

Tech./BBA/BCA/BJMC/BPT- SEMESTER–II

PUNJAB HISTORY & CULTURE (C 321 TO 1000 A.D.)

(Special Paper in lieu of Punjabi compulsory)

(For those students who are not domicile of Punjab)

Time: 3 Hours

Total. Marks: 50

Theory: 37

Internal Assessment: 13

Instructions for the Paper Setter:

The question paper consists of five units: I, II, III, IV and V. Units I, II, III and IV will have two questions each. Each question carries 8 marks. The students are to attempt one question from each unit approximately in 800 words. Unit-V consists of 7 short answer type questions to be set from the entire syllabus. Students are to attempt any 5 questions in about 20 words each. Each question carries 1 mark.

Note: The examiner is to set the question paper in two languages: English & Hindi.

Unit-I

1. Punjab under Chandragupta Maurya and Ashoka.
2. The Kushans and their Contribution to the Punjab.

Unit-II

3. The Punjab under the Gupta Emperors.
4. The Punjab under the Vardhana Emperors

Unit-III

5. Political Developments 7th Century to 1000 A.D.
6. Socio-cultural History of Punjab from 7th Century to 1000 A.D.

Unit-IV

7. Development of languages and Literature.
8. Development of art & Architecture.

Suggested Readings:-

1. L. Joshi (ed), History and Culture of the Punjab, Part-I, Patiala, 1989 (3rd edition)
2. L.M. Joshi and Fauja Singh (ed), History of Punjab, Vol.I, Patiala 1977.
3. Budha Parkash, Glimpses of Ancient Punjab, Patiala, 1983.
4. B.N. Sharma, Life in Northern India, Delhi. 1966.

Bachelor of Vocation (B.Voc.) FOOD PROCESSING SEMESTER – II
SESSION 2021-22
BVGC-203 DA-II DRUG ABUSE

SEMESTER–II
DA2- DRUG ABUSE: PROBLEM, MANAGEMENT AND PREVENTION
DRUG ABUSE: MANAGEMENT AND PREVENTION
(Compulsory for all Under Graduate Classes)

Time: 3 Hours

Total Marks: 50

Instructions for the Paper Setters:

Section–A: (15 Marks): It will consist of five short answer type questions. Candidates will be required to attempt three questions, each question carrying 05 marks. Answer to any of the questions should not exceed two pages.

Section–B: (20 Marks) It will consist of four essay type questions. Candidates will be required to attempt two questions, each question carrying 10 marks. Answer to any of the questions should not exceed four pages.

Section–C: (15 Marks) It will consist of two questions. Candidate will be required to attempt one question only. Answer to the question should not exceed 5 pages.

UNIT-I

- **Prevention of Drug abuse**

Role of family: Parent child relationship, Family support, Supervision, Shaping values, Active Scrutiny.

UNIT-II

- School: Counseling, Teacher as role-model. Parent-teacher-Health Professional Coordination, Random testing on students.

UNIT-III

- **Controlling Drug Abuse**

Media: Restraint on advertisements of drugs, advertisements on bad effects of drugs, Publicity and media, Campaigns against drug abuse, Educational and awareness program

UNIT-IV

- Legislation: NDPs act, Statutory warnings, Policing of Borders, Checking Supply/Smuggling of Drugs, Strict enforcement of laws, Time bound trials.

Books Recommended:

1. Extent, Pattern and Trend of Drug Use in India, Ministry of Social Justice and Empowerment,

- Government of India, 2004.
2. Gandotra, R. and Randhawa, J.K. 2018. *voZrI d[otos'A (BPky'oh) gqpzXB ns o'eEkw*. Kasturi Lal & Sons, Educational Publishers, Amritsar- Jalandhar.
 3. Inciardi, J.A. 1981. *The Drug Crime Connection*. Beverly Hills: Sage Publications.
 4. Modi, Ishwar and Modi, Shalini (1997) *Drugs: Addiction and Prevention*, Jaipur: Rawat Publication.
 5. Randhawa, J.K. and Randhawa, Samreet 2018. *Drug Abuse-Management and Prevention*. Kasturi Lal & Sons, Educational Publishers, Amritsar- Jalandhar.
 6. Sain, Bhim 1991, *Drug Addiction Alcoholism, Smoking obscenity* New Delhi: Mittal Publications.
 7. Sandhu, Ranvinder Singh, 2009, *Drug Addiction in Punjab: A Sociological Study*. Amritsar: Guru Nanak Dev University.
 8. Singh, Chandra Paul 2000. *Alcohol and Dependence among Industrial Workers*: Delhi: Shipra.
 9. *World Drug Report 2011*, United Nations office of Drug and Crime.
 10. *World Drug Report 2010*, United Nations office of Drug and Crime

Bachelor of Vocation (B.Voc.) FOOD PROCESSING SEMESTER – II

SESSION 2021-22

BVFP-204: Food Chemistry

Time: 3 Hours

Max. Marks: 60

Theory Marks: 45

Internal Marks: 15

Instructions for the Paper Setters:

Theory: – Question paper will contain eight questions in all and students will be asked to attempt five questions. All questions will carry equal marks. Question no. 1 will be objective type and compulsory.

Theory:

UNIT I

Introduction- Water in foods, structure and its properties. Water activity, free and bound moisture.

Carbohydrates: Introduction, sources, classification and structure. Functional properties of sugars and polysaccharides in foods, chemical reactions of carbohydrates-Hydrolysis, Enolization, Mutarotation, Dehydration, Browning reactions, Gelatinization and Retrogradation of starch.

Proteins: types-essential and non-essential amino acids, classification, common food proteins, Biological valence (BV) of some food proteins, Functional properties of proteins, Hydrolysis of proteins, Denaturation, renaturation and Gelation

UNIT – II

Lipids: Classification, Physical characteristics of lipids, chemical properties of fats -hydrolysis, oxidation and hydrogenation. Rancidity and its mechanism. Common edible fats, oils and emulsions. Lipids of biological importance like cholesterol and phospholipids, functional properties of lipids. Effect of processing on lipids.

UNIT – III

Enzymes: Nomenclature, Definition, mechanism of enzyme action, factors affecting enzyme action, Enzyme inhibition, importance of enzymes in food processing

Books Recommended:

1. Food Chemistry by L. H. Mayer. 2004. CBS Publishers.

2. Handbook of Analysis and Quality Control for Fruit and Vegetable Products by S Ranganna, Tata Mc Graw Hill Education, 1986.

2. Food Chemistry by Fennemma. 2007. CRC Press.

Bachelor of Vocation (B.Voc.) FOOD PROCESSING SEMESTER – II

SESSION 2021-22

BVFP-205 FOOD HYGIENE AND SANITATION

Time: 3 Hours

Max. Marks: 60

Theory Marks: 45

Internal Marks: 15

Instructions for the Paper Setters:

Theory: – Question paper will contain eight questions in all and students will be asked to attempt five questions. All questions will carry equal marks. Question no. 1 will be objective type and compulsory.

Theory:

UNIT-I

General principles of hygiene and its relation to food preparation, Personal hygiene, Food handling habits, General hygienic and sanitary practices to be followed by different food business operators - fruits and vegetable, milk and milk product, meat and meat product, catering etc.

UNIT-II

Good Manufacturing Practices, Good Laboratory Practices, Quality Circles and Quality Culture Concept. Introduction to FSSAI. Basic concept of HACCP.

Sanitation facilities and procedures in food plant operation.

Methods of cleaning and disinfection. Detergents and Sanitizer.

UNIT-III

Water quality - water standards and analysis of physical, chemical and microbiological characteristics of water. Waste treatment - fundamentals of physical, biological & chemical waste treatments.

Books Recommended:

1. Guide to improving Food Hygiene - Ed Gaston and Tiffney.
2. Practical Food Microbiology and Technology (2nd edition) – J. Mountney and W.A. Gould, 1988. AVI Books.
3. Food Poisoning and Food Hygiene - Betty C. Hobbs (3rd Edition). Hodder & Stoughton Educational. UK.

Bachelor of Vocation (B.Voc.) FOOD PROCESSING SEMESTER – II

SESSION 2021-22

BVFP-206: Cereal Milling Technology

Time: 3 Hours

Max. Marks: 60

Theory Marks: 45

Internal Marks: 15

Instructions for the Paper Setters:

Theory: – Question paper will contain eight questions in all and students will be asked to attempt five questions. All questions will carry equal marks. Question no. 1 will be objective type and compulsory.

Theory:

UNIT-I

Cereal grain definition and different types of grains.

Structure and chemical composition of wheat, rice and maize.

UNIT-II

Pre-processing of grains: Cleaning, conditioning and tempering of grains

Traditional and modern milling of wheat and flour extraction rate.

Wheat flour for various purposes- Bread flour, Biscuit or cookie flour, cake flour, self-raising flour, instantized or agglomerated flour. Improvers and Bleachers - their principle and action.

Traditional and modern milling of paddy.

Dry and wet milling of maize.

UNIT-III

Introduction and chemical composition of pulses.

Decortication and milling of pulses.

Anti-nutritional factors of pulses and their elimination.

Books Recommended:

1. Technology of Cereals by Kent N. L. and Evers AD, 4th Ed., 1983, Woodhead Publishing Ltd., UK.
2. Principle of Cereal Science & Technology by Kent. NL, 1983, Pergamon Press, London, UK.
3. The Chemistry & Technology of Cereal as Food & Feed by Maiz S.A, 1996, CBS Publishers, New Delhi.
4. Food Science by Potter NN, 5th Ed., 2006, CBS Publisher, New Delhi.
5. Technology of cereal, legume and oil seeds by Chakrobarty S. Deor, IBH Publisher.

Bachelor of Vocation (B.Voc.) FOOD PROCESSING SEMESTER – II

SESSION 2021-22

BVFP-207: Experiments in Food Chemistry

Time: 3 Hours

Max. Marks: 40

Practical Marks: 30

Internal Marks: 10

Instructions for the Paper Setters:

Practical – Question Paper will be set with the mutual consent of Internal and External Examiners on the spot.

Practicals:

1. Determination of moisture in a given sample.
2. Microstructure of starches
3. Determination of reducing sugar in the given food sample.
4. Nitrogen analysis by micro-kjeldahl or spectrophotometer method.
5. Estimation of fat by soxhlet method.
6. Estimation of free fatty acid of given sample.
7. Determination of salt in food products.
8. Qualitative analysis of sugars.
9. Qualitative analysis of proteins in given sample.
10. Qualitative analysis of lipids in the given sample.
11. Clarification of juices using enzymes

Books Recommend:

1. Hand Book of Analysis of Fruits & Vegetables by S. Ranganna.
2. Food Chemistry by Fennemma.

Bachelor of Vocation (B.Voc.) FOOD PROCESSING SEMESTER – II

SESSION 2021-22

BVFP-208 EXPERIMENTS IN FOOD HYGIENE AND SANITATION

Time: 3 Hours

Max. Marks: 40

Practical Marks: 30

Internal Marks: 10

Instructions for the Paper Setters:

Practical – Question Paper will be set with the mutual consent of Internal and External Examiners on the spot.

1. Analysis of water used in food industries → Determination of acidity of the given sample of water.
2. Determination of alkalinity of the given sample of water.
3. Determination of the total hardness of Water.
4. Determination of pH of the given sample of Water.
5. Determination of Total Solids of the given sample of Water.
6. Determination of Total Dissolved Solids of the given sample of Water.
7. Assessment of surface sterilization using swab and rinse method.
8. Rapid adulteration tests for foods.
9. Case Study of food hygiene and sanitation (GMP/GHP) of a food industry.

Books Recommended:

1. Practical Food Microbiology and Technology (2nd edition) – J. Mountney and W.A. Gould, 1988.

Bachelor of Vocation (B.Voc.) FOOD PROCESSING SEMESTER – II

SESSION 2021-22

BVFP-209: Experiments in Cereal Milling Technology

Time: 3 Hours

Max. Marks: 40

Practical Marks: 30

Internal Marks: 10

Instructions for the Paper Setters:

Practical – Question Paper will be set with the mutual consent of Internal and External Examiners on the spot.

Practicals:

1. Determination of physical characteristics of wheat.
2. Determination of physical characteristics of rice.
3. Determination of moisture, ash and crude fibre in cereal grains.
4. Milling of wheat into flour.
5. Milling of paddy to brown rice and white rice.
6. Cooking quality of rice.
7. Dry-milling of maize into grits
8. Wet-Milling of maize
9. Visit to flour mill, rice mill and pulse mill.

Books Recommended:

1. Technology of Cereals by Kent N. L. and Evers AD, 4th Ed., 1983, Woodhead Publishing Ltd., UK.
2. Principle of Cereal Science & Technology by Kent. NL, 1983, Pergamon Press, London, UK.

Bachelor of Vocation (B.Voc.) FOOD PROCESSING SEMESTER – II
SESSION 2021-22

BVFP-210 INDUSTRIAL TRAINING

SATISFACTORY/UNSATISFACTORY

Note: Submission of report and certificate after completion of Training.

A student will undergo 1 month compulsory training in any Food Processing Industry/ Institute concerned with processing and quality analysis of foods. After the completion of training the student will submit certificate issued by the industry/institute to the Head of concerned department. Student will have to submit training report within 2 weeks after the completion of training to the department. The report will be evaluated as satisfactory/Unsatisfactory.

Bachelor of Vocation (B.VOC.) FOOD PROCESSING SEMESTER – III

SESSION 2021-22

BVGC-301 Computer Applications

Time: 3 Hours

Max. Marks: 60

Theory Marks:45

Internal Assessment:15

Instructions for the Paper Setters:

Note: 1. Medium of Examination is English Language.

Theory: – Question paper will contain seven questions in all and students will be asked to attempt any four questions. All questions will carry equal marks.

Theory:

UNIT-I

FUNDAMENTAL OF COMPUTER: Introduction to computer, Applications of computer.Components of computer. Primary and Secondary storage. Number systems.

INTRODUCTION TO WINDOWS: Parts of window screen (Desktop, Window, Icons), Startmenu, Taskbar, settings, application & document window, anatomy of a window (Title bar, minimize, maximize button, control box, scroll bars, scroll buttons, scroll boxes), Window explorer (expansion, collapsing of directory free, copying, moving, deleting files, folder, creating folders), About desktop icons (recycle bin, my computer, network neighborhood, briefcase), folder, shortcut creation, setting of screen saver, color settings , wallpaper, changing window appearance.

INTERNETInternet basics, Its uses and Applications.

UNIT-II

MS-WORD: Introduction to MS-word, Parts of window of word (Title bar, menu bar, statusbar, ruler),Creation of new document, opening document, insert a document into another document. Page setup, margins, gutters, font properties, Alignment, page breaks, header, footer, deleting, moving replace, a filing text in document. Saving a document, spell checker, printing a document, creating a table, entering editing text in tables, changing format of table, height width of row or column Editing, deleting, rows, Columns in table. Borders, shading, Templates, Wizards Drawing objects, mail merge.

MS-POWER POINT : Introduction, elements of Power Point Package, starting Power Point,Exploring Power Point menus, starting a new slide, Adding Titles, Text and Art, Moving text area and resizing text box starting a slide show, saving a presentation, printing slides, opening an existing presentation, Inserting and deleting slides in a presentation, changing text and correcting error, checking spelling, adding header and footer, closing a presentation, To quit from Power Point views, slide setup, setting up slide show, setting transistors and slide timings, Automatic slide show, Formatting and Enhancing text, Slide with graph.

Book Recommended:

1. Rajaraman, V. (2006), "Fundamental of Computers", 4th Edition, Prentice Hall India, New Delhi.
2. Alexis Leon and Matheus Leon (2001), "Introduction to Computers with MS office 2000", 1st edition, Tata McGraw-Hill, New Delhi.
3. Srivastava, S.S(2002), "Ms-Office", Firewall Media, New Delhi.
4. Peter Norton(2010), "Introduction to Computers", 7th Edition, McGraw-Hill, New Delhi.
5. Sharma Anshuman, "A book of Fundamentals of Information Technology", Lakhanpal Publications.
6. MS Office BPB Publications.

Bachelor of Vocation (B.VOC.) FOOD PROCESSING SEMESTER – III

SESSION 2021-22

BVGC-302 Experiments in Computer Applications

Time: 3 Hours

Max. Marks: 40

Practical Marks:30

Internal Assessment:10

Practical – Question Paper will be set with the mutual consent of Internal and External Examiners at the spot.

PRACTICALS:

WINDOW 7:

1. Personalize the Windows 7 desktop
2. Add and remove gadgets
3. Add shortcuts
4. Move between windows and customize the taskbar
5. Use Windows Explorer and create folders
6. Move and rename folders and copy files
7. Move, rename, and delete files
8. Compress files and use the address bar
9. Describe and find files and folders
10. Resize, move, and scroll windows

MS-WORD 2010:

1. Create a document files, save it and print it.
2. Spell check the created document file.
3. Create a Table and sort the data within the table.
4. Mail Merge invitation to your friends.
5. Apply border to a particular paragraph and shade it 10% with Background yellow colour.

MS-POWER POINT 2010:

1. Create a presentation, save it and print it.
2. Format a presentation with changing the fonts and size and selecting text style and colours.
3. Create a graph; add titles, axes and legends to a graph.
4. Add a Clipart picture to a chart.

Book Recommended:

1. Rajaraman, V. (2006), "Fundamental of Computers", 4th Edition, Prentice Hall India, New Delhi.
2. Alexis Leon and Matheus Leon (2001), "Introduction to Computers with MS office 2000", 1st edition, Tata McGraw-Hill, New Delhi.

Bachelor of Vocation (B.VOC.) FOOD PROCESSING SEMESTER – III
SESSION 2021-22

BVGC-303 ENVIRONMENTAL STUDIES–I (COMPULSORY)

Time: 3 Hrs.

Max. Marks: 50

Theory Lectures: 1½ Hours/ Week

Theory Marks: 37; Int ass.: 13

Section–A: (12 Marks): It will consist of five short answer type questions. Candidates will be required to attempt three questions, each question carrying four marks. Answer to any of the questions should not exceed two pages.

Section–B: (16 Marks): It will consist of four essay type questions. Candidates will be required to attempt two questions, each question carrying eight marks. Answer to any of the questions should not exceed four pages.

Section–C: (9 Marks): It will consist of two questions. Candidate will be required to attempt one question only. Answer to the question should not exceed 5 pages.

1. The Multidisciplinary Nature of Environmental Studies:

- ☐ Definition, scope & its importance.
- ☐ Need for public awareness.

2. Natural Resources:

- ☐ Natural resources and associated problems:

a) Forest Resources: Use of over exploitation, deforestation, case studies. Timber extraction, mining, dams and their effects on forests and tribal people.

b) Water Resources: Use and over-utilization of surface and ground water, floods, drought, conflicts over water, dams-benefits and problems.

c) Mineral Resources: Use and exploitation, environmental effects of extracting and using mineral resources, case studies.

d) Food Resources: World food problems, change caused by agriculture and overgrazing, effects of modern agriculture, fertilizer-pesticide problem, salinity, case studies.

e) Energy Resources: Growing of energy needs, renewable and non-renewable energy resources, use of alternate energy sources, case studies.

f) Land Resources: Land as a resource, land degradation, soil erosion and desertification. Role of an individual in conservation of natural resources. Equitable use of resources for sustainable lifestyles.

3. Ecosystem:

Concept of an ecosystem.

Structure and function of an ecosystem. Producers, consumers and decomposers. Energy flow in the ecosystem.

Ecological succession.

Food chains, food webs and ecological pyramids.

Introduction, types, characteristic features, structure and function of the following ecosystems: a. Forest ecosystem

b. Grassland

ecosystem c. Desert ecosystem

d. Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries)

4. Social Issues and Environment:

From unsustainable to sustainable development.

Urban problems related to energy.

Water conservation, rain water harvesting, watershed management.

Resettlement and rehabilitation of people; its problems and concerns. Case studies.

Environmental ethics: Issues and possible solutions.

Climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust. Case studies.

Wasteland reclamation.

Consumerism and waste products.

Environmental Protection Act:

- ☐ Air (prevention and Control of Pollution) Act.
- ☐ Water (prevention and Control of Pollution) Act.
- ☐ Wildlife Protection Act.
- ☐ Forest Conservation Act.

Issues involved in enforcement of environmental legislation.

Public awareness.

5. National Service Scheme

- ☐ **Introduction and Basic Concepts of NSS:** History, philosophy, aims & objectives of NSS; Emblem, flag, motto, song, badge etc.; Organizational structure, roles and responsibilities of various NSS functionaries.
- ☐ **Health, Hygiene & Sanitation:** Definition, needs and scope of health education; Food and Nutrition; Safe drinking water, water borne diseases and sanitation (Swachh Bharat Abhiyan); National Health Programme; Reproductive health.

References/Books:

1. Agarwal, K. C. 2001. Environmental Biology, Nidhi Publications Ltd. Bikaner.
2. Bharucha, E. 2005. Textbook of Environmental Studies, Universities Press, Hyderabad.
3. Down to Earth, Centre for Science and Environment, New Delhi.
4. Jadhav, H. & Bhosale, V. M. 1995. Environmental Protection and Laws. Himalaya Pub.
5. Joseph, K. and Nagendran, R. 2004. Essentials of Environmental Studies, Pearson Education (Singapore) Pte. Ltd., Delhi.
6. Kaushik, A. & Kaushik, C. P. 2004. Perspective in Environmental Studies,
7. Miller, T. G. Jr. 2000. Environmental Science, Wadsworth Publishing Co.
8. Sharma, P. D. 2005. Ecology and Environment, Rastogi Publications, Meerut.
9. Booklet on Safe Driving. Sukhmani Society (Suvidha Centre), District Court Complex, Amritsar
10. Kanta, S., 2012. Essentials of Environmental Studies, ABS Publications, Jalandhar.

Bachelor of Vocation (B.VOC.) FOOD PROCESSING SEMESTER – III

SESSION 2021-22

BVFP 304- CEREALS AND PULSES TECHNOLOGY

Time: 3 Hours

Max. Marks: 60

Theory Marks: 45

Internal Marks: 15

Instructions for the Paper Setters:

Theory: – Question paper will contain eight questions in all and students will be asked to attempt five questions. All questions will carry equal marks. Question no. 1 will be objective type and compulsory.

Theory:

UNIT-I

Cereal grain definition, Structure and chemical composition of wheat, rice and maize.

Milling criteria and quality criteria for grains.

Wheat: Classification of wheat; cleaning and conditioning. Traditional and modern milling of wheat and flour extraction rate. Wheat flour- types and usage, Improvers and Bleachers - their principle and action.

UNIT-II

Parboiling of Paddy. Advantages and disadvantages of parboiling. Properties of parboiled rice.

Traditional and modern milling of paddy.

Dry and wet milling of maize.

UNIT-III

Introduction and chemical composition of pulses.

Decortication and polishing of pulses. Anti-nutritional factors of pulses and their elimination.

Soyabean- processing into soya flour, Soya Protein Concentrates and Isolates

Books Recommended:

1. David Dendy A.V, etal; Cereals and Cereal Products: Technology and Chemistry, - 2000
2. Manay, N.S, Shadaksharaswamy, M., Foods- Facts and Principles, New Age International Publishers, New Delhi, 2004.
3. Potter, N.N. and Hotchkiss J. H. Food Science. CBS publishers and distributors. 1996.
4. Srilakshmi, B. Food Science. New Age International Publishers, New Delhi, 2003.
5. Subalakshmi, G and Udipi, S.A. Food processing and preservation. New Age International Publishers, New Delhi, 2001.

Bachelor of Vocation (B.VOC.) FOOD PROCESSING SEMESTER – III

SESSION 2021-22

BVFP 305 FOOD MICROBIOLOGY

Time: 3 Hours

Max. Marks: 60

Theory Marks: 45

Internal Marks: 15

Instructions for the Paper Setters:

Theory: – Question paper will contain eight questions in all and students will be asked to attempt five questions. All questions will carry equal marks. Question no. 1 will be objective type and compulsory.

Theory:

Theory:

UNIT-I

Introduction - Origin of food microbiology as science, Food as nutrient for various microorganisms, Factor affecting the growth and survival of microorganisms in foods, General features and importance of different groups of bacteria, yeasts and molds important in foods.

Methods for microbial examination of foods - Traditional, non-traditional and rapid methods for themicrobial examination of food and food products.

UNIT-II

Food Spoilage - Microbial and biochemical aspect of food spoilage, role of bacteria, yeast and molds infood spoilage, Spoilage of cereal and cereal products, fruits and vegetables, meat and meat products, milk and milk products, fish and fish products, spoilage of egg and poultry and heated canned foods.

UNIT-III

Food Borne Illness - Food intoxication and food infection, Bacterial food poisoning by *Staphylococcus aureus*, *Clostridium botulinum*, *Salmonella*, *E. coli*, *Clostridium perfringens*, *Listeria monocytogenes*, and *Campylobacter jejuni*, Food borne viruses, Aflatoxigenic molds, Investigation of food borne disease outbreak.

Books Recommended:

1. Frazier WC and Westoff DC "Food Microbiology" 4th edition Tata Mc graw-Hill Publishing
2. Jay JM "Modern Food Microbiology" 3rd edition CBS Publishers and distributors Delhi 1987
3. Adams MR and Moss MO "Food microbiology" New Age International (P) Ltd. 1996
4. Gunasekaran P. "Laboratory Manual in Microbiology", New Age International (P) Ltd. 1996.

Bachelor of Vocation (B.VOC.) FOOD PROCESSING SEMESTER – III

SESSION 2021-22

BVFP 306-DAIRY TECHNOLOGY-I

Time: 3 Hours

Max. Marks: 60

Theory Marks: 45

Internal Marks: 15

Instructions for the Paper Setters:

Theory: – Question paper will contain eight questions in all and students will be asked to attempt five questions. All questions will carry equal marks. Question no. 1 will be objective type and compulsory.

Theory:

UNIT-I

Introduction Milk - Definition, sources, and composition of milk, factors effecting composition of milk, physiochemical properties of milk, collection and transportation of milk.

UNIT-II

Special milks: evaporated milk, condensed milk, standardized milk, toned milk, double toned milk, flavoured milk, reconstituted milk.

Processing of market milk Flowchart of milk processing, Reception, Different types of cooling systems. Clarification and filtration process, standardization- Pearson's square method.

UNIT-III

Pasteurization-LTLT, HTST and UHT process, continuous pasteuriser, Sterilisation and Homogenisation, Cream separation- centrifugal cream separator, bactofugation.

Books Recommended:

1. Outlines of Dairy Technology by Sukumar De, 1980, Oxford University Press, New Delhi.
2. Alan H. Varnam, (2012), "Milk and Milk Products: Technology, chemistry and microbiology", Springer Science & Business Media Publishers.
3. Robinson, R. K., (2012), "Modern Dairy Technology: Volume 2 Advances in Milk Products", Springer Science & Business Media Publishers.

Bachelor of Vocation (B.Voc.) FOOD PROCESSING SEMESTER – III
SESSION 2021-22

BVFP 307-: EXPERIMENTS IN CEREALS AND PULSES TECHNOLOGY

Time: 3 Hours

Max. Marks: 40

Practical Marks: 30

Internal Marks: 10

Instructions for the Paper Setters:

Practical – Question Paper will be set with the mutual consent of Internal and External Examiners on the spot.

Practicals:

1. Determination of physical characteristics of wheat.
2. Determination of physical characteristics of rice.
3. Determination of moisture content and ash content in cereals and pulses grains.
4. Determination of crude fiber content in cereals and pulses grains.
5. Milling of wheat into flour or meal
6. Milling of paddy to brown rice and white rice.
7. Cooking quality of pulses.
8. Visit to flour mill, rice mill and pulse mill.

Bachelor of Vocation (B.Voc.) FOOD PROCESSING SEMESTER – III
SESSION 2021-22
BVFP-308: EXPERIMENTS IN FOOD MICROBIOLOGY

Time: 3 Hours

Max. Marks: 40

Practical Marks: 30

Internal Marks: 10

Instructions for the Paper Setters:

Practical – Question Paper will be set with the mutual consent of Internal and External Examiners on the spot.

Practicals:

1. Sterilization and disinfection of equipment used in food microbiology laboratory.
2. Preparation of media, slant and broths required in the microbial analysis of foods.
3. To count the number of microorganisms by direct microscopic count method.
4. Study of different types of microorganism colony shapes on agar plates.
5. Study of the capsular and spore staining methods.
6. Isolation of fungi from food materials.
7. Study of incubation test of heated canned foods.
8. Study of Dye reduction test of milk.
9. Microbiological analysis of egg, cereal product and fruit product.

Books Recommended:

1. Frazier WC and Westoff DC "Food Microbiology" 4th edition Tata Mc graw-Hill Publishing
2. Jay JM "Modern Food Microbiology" 3rd edition CBS Publishers and distributors Delhi 1987
5. Adams MR and Moss MO "Food microbiology" New Age International (P) Ltd. 1996
6. Gunasekaran P. "Laboratory Manual in Microbiology", New Age International (P) Ltd. 1996.

Bachelor of Vocation (B.Voc.) FOOD PROCESSING SEMESTER – III
SESSION 2021-22
BVFP-309: EXPERIMENTS IN DAIRY TECHNOLOGY-I

Time: 3 Hours

Max. Marks: 40

Practical Marks: 30

Internal Marks: 10

Instructions for the Paper Setters:

Practical – Question Paper will be set with the mutual consent of Internal and External Examiners on the spot.

Practicals:

1. To prepare a chart of physico –chemical properties and microbiological standards of milk and milk products.
2. Determination of specific gravity, SNF % and TS% of milk.
3. Determination of milk fat percentage by Gerber’s method.
4. Platform tests of milk like organoleptic tests, clot on boiling test, alcohol test, pH and % acidity test- Alizarin Alcohol test.
5. Detection of various adulterants and neutralizer in milk
6. Reporting on the quality of given sample of milk.
7. Visit to milk processing plants/NDRI, Karnal.

Books Recommended:

1. Outlines of Dairy Technology by Sukumar De, 1980, Oxford University Press, New Delhi.
2. Alan H. Varnam, (2012), “Milk and Milk Products: Technology, chemistry and microbiology”, Springer Science & Business Media Publishers.

Bachelor of Vocation (B.VOC.) FOOD PROCESSING SEMESTER – IV
SESSION 2021-22

BVGC 401 FOOD SAFETY AND LAWS

Time: 3 Hours

Max. Marks: 60
Theory Marks: 45
Internal Marks: 15

Instructions for the Paper Setters:

Theory: – Question paper will contain eight questions in all and students will be asked to attempt five questions. All questions will carry equal marks. Question no. 1 will be objective type and compulsory.

Theory:

UNIT-I

INTRODUCTION TO FOOD SAFETY

Definition, Factors affecting Food Safety, Importance of Safe Foods.

UNIT-II

FOOD HAZARDS OF PHYSICAL, CHEMICAL AND BIOLOGICAL ORIGIN

Introduction, Physical Hazards with common examples, Chemical Hazards (naturally occurring environmental and intentionally added and contaminants due to processing, Microbiological hazards (Bacterial and Fungal).

UNIT-III

FOOD SAFETY MANAGEMENT TOOLS

Prerequisites of food hygiene- GHPs ,GMPs, HACCP, TQM - concept and need for quality, Steps involved in implementation of food safety programme. Food safety laws and regulations (FSSAI).New approaches to food safety.

Recommended Books:

1. Adam MR and Moss MO Food microbiology New Age International (P) Ltd.
ND Jay JM Modern Food Microbiology CBS publishers ND Potter NN Food
Science CBS Publishers ND
2. Bhunia AK Food borne Microbial Pathogens (Mechanism and Pathogenesis) Food Science text series Springer
Food Safety by Ian C Shaw: Publisher Wiley Blackwell

Bachelor of Vocation (B.VOC.) FOOD PROCESSING SEMESTER – IV
SESSION 2021-22

BVGC 402 EXPERIMENTS IN FOOD SAFETY AND LAWS

Time: 3 Hours

Max. Marks: 40

Practical Marks: 30

Internal Marks: 10

Instructions for the Paper Setters:

Practical – Question Paper will be set with the mutual consent of Internal and External Examiners on the spot.

Practicals

1. Identification of different hazards in food material.
2.]Sensory evaluation of packed food products.
3. Demonstration of GHP follow during food preparations.
4. Study of cleaning and sanitizers used in pre and post operative processes in food industry.
5. Implementation of HACCP chart in food processing laboratory while cooking.
6. HACCP chart for different food industries.
7. Inspecting the intentionally added adulterants in spices.
8. Inspecting the intentionally added adulterants in milk.
9. Demonstration of different steps involved in implementation of food safety programme.

Recommended Books:

1. Bhunia AK Food borne Microbial Pathogens (Mechanism and Pathogenesis) Food Science text series Springer
Food Safety by Ian C Shaw: Publisher Wiley Blackwell

Bachelor of Vocation (B.VOC.) FOOD PROCESSING SEMESTER – IV
SESSION 2021-22

BVGC-403 ENVIRONMENTAL STUDIES–II (COMPULSORY)

Time: 3 Hrs.

Max. Marks: 50

Theory Lectures: 1½ Hours/ Week

Theory Marks: 37; Int ass.: 13

Section–A: (12 Marks): It will consist of five short answer type questions. Candidates will be required to attempt three questions, each question carrying four marks. Answer to any of the questions should not exceed two pages.

Section–B: (16 Marks): It will consist of four essay type questions. Candidates will be required to attempt two questions, each question carrying eight marks. Answer to any of the questions should not exceed four pages.

Section–C: (9 Marks): It will consist of two questions. Candidate will be required to attempt one question only. Answer to the question should not exceed 5 pages.

1. Biodiversity and its Conservation:

- ❑ Definition: Genetic, species and ecosystem diversity.
- ❑ Biogeographical classification of India.
- ❑ Value of Biodiversity: Consumptive use; productive use, social, ethical, aesthetic and option values.
- ❑ Biodiversity of global, National and local levels.
- ❑ India as mega-diversity nation.
- ❑ Hot-spots of biodiversity.
- ❑ Threats to Biodiversity: Habitat loss, poaching of wild life, man wildlife conflicts.
- ❑ Endangered and endemic species of India.
- ❑ Conservation of Biodiversity: In situ and Ex-situ conservation of biodiversity.

2. Environmental Pollution:

Definition, causes, effects and control measures of:

- a) Air Pollution
- b) Water Pollution
- c) Soil Pollution
- d) Marine Pollution
- e) Noise Pollution
- f) Thermal Pollution
- g) Nuclear Hazards
- h) Electronic Waste

Solid Waste Management: Causes, effects and control measures of urban and industrial wastes.

Role of an individual in prevention of pollution.

Pollution case studies.

Disaster Management: Floods, Earthquake, Cyclone and Landslides.

3. Human Population and the Environment

Population growth, variation among nations. Population explosion-Family welfare programme.

Environment and human health. Human rights.

Value education. HIV/AIDS.

Women and child welfare.

Role of information technology in environment and human health. Case studies.

Road Safety Rules & Regulations: Use of Safety Devices while Driving, Do's and Don'ts while Driving, Role of Citizens or Public Participation, Responsibilities of Public under Motor Vehicle Act, 1988, General Traffic Signs.

Accident & First Aid: First Aid to Road Accident Victims, Calling Patrolling Police & Ambulance.

4. National Service Scheme:

- ② **Entrepreneurship Development:** Definition & Meaning; Qualities of good entrepreneur; Steps/ ways in opening an enterprise; Role of financial and support service Institutions.
- ② **Civil/Self Defense:** Civil defense services, aims and objectives of civil defense; Needs for self-defense training.

5. Field Visits:

- ② Visit to a local area to document environmental assets—river/forest/grassland/hill/mountain.
- ② Visit to a local polluted site—Urban/Rural/Industrial/Agricultural.
- ② Study of common plants, insects, birds.
- ② Study of simple ecosystems—pond, river, hill slopes etc.
- ② Contribution of the student to NSS/any other social cause for service of society.

Note: In this section the students will be required to visit and write on the environment of an area/ecosystem/village industry/disaster/mine/dam/agriculture field/waste management/ hospital etc. with its salient features, limitations, their implications and suggestion for improvement.

References/Books:

1. Agarwal, K. C. 2001. Environmental Biology, Nidhi Publications Ltd. Bikaner.
2. Bharucha, E. 2005. Textbook of Environmental Studies, Universities Press, Hyderabad.
3. Down to Earth, Centre for Science and Environment, New Delhi.
4. Jadhav, H. & Bhosale, V. M. 1995. Environmental Protection and Laws. Himalaya Pub.
5. Joseph, K. and Nagendran, R. 2004. Essentials of Environmental Studies, Pearson Education (Singapore) Pte. Ltd., Delhi.
6. Kaushik, A. & Kaushik, C. P. 2004. Perspective in Environmental Studies,
7. Miller, T. G. Jr. 2000. Environmental Science, Wadsworth Publishing Co.
8. Sharma, P. D. 2005. Ecology and Environment, Rastogi Publications, Meerut.
9. Booklet on Safe Driving. Sukhmani Society (Suvidha Centre), District Court Complex, Amritsar
10. Kanta, S., 2012. Essentials of Environmental Studies, ABS Publications, Jalandhar.

Bachelor of Vocation (B.VOC.) FOOD PROCESSING SEMESTER – IV
SESSION 2021-22

BVFP-404 BAKERY AND CONFECTIONERY TECHNOLOGY

Time: 3 Hours

Max. Marks: 60

Theory Marks: 45

Internal Marks: 15

Instructions for the Paper Setters:

Theory: – Question paper will contain eight questions in all and students will be asked to attempt five questions. All questions will carry equal marks. Question no. 1 will be objective type and compulsory.

UNIT-I

Quality analysis of wheat flour, physical dough testing instruments, major and minor ingredients used for bakery products, leavening agents. Role of ingredients in baking. Principles of baking technology. Preparation methods of bread, cookies and cakes.

UNIT-II

Composition and characteristics of cane Juice, Cane Juice extraction. Manufacturing of sugar. Deterioration of sugars during storage & transportation and its prevention, By-products of sugar industry and their utilization.

UNIT-III

Classification of confectionary. Hard and soft boiled sugar confectionary: fondant, fudge, caramel, toffee butterscotch, Sugar panning, hard boiled candy.

Recommended Books:

1. Chocolate, Cocoa and Confectionary: Science & Technology by Minife, 1997, AVI Publishing Co., New York.
2. Handbook of Cane Sugar Technology by Mathur RBL, 1986, Oxford & IBH Publishing Co., New Delhi.
3. The Science of Cookie & Cracker Production by Faridi H., 1994, Chapman & Hall, UK.
4. Technology of Cereals by Kent, N.L. Pergamon Press, Oxford, UK.
5. Modern Cereal Science and Technology, by Pomeranz, Y. VCH Pub., New York.1987.

Bachelor of Vocation (B.VOC.) FOOD PROCESSING SEMESTER – IV

SESSION 2021-22

BVFP- 405 DAIRY TECHNOLOGY-II

Time: 3 Hours

Max. Marks: 60

Theory Marks: 45

Internal Marks: 15

Instructions for the Paper Setters:

Theory: – Question paper will contain eight questions in all and students will be asked to attempt five questions. All questions will carry equal marks. Question no. 1 will be objective type and compulsory.

Theory:

UNIT-I

Fat rich dairy products:**Cream:** Different types of cream with their respective fat content, composition of cream, production methods: gravity methods, mechanical method- by the use of cream separator. Neutralization of cream.

Butter: Types of butter, composition. Preparation of butter. Factors affecting the churn ability of cream. Churning theories. Standards of butter and shelf life.

Ghee: Manufacturing methods of ghee. storage of ghee and shelf life.

UNIT-II

Cheese: Classification of cheese. Quality of milk for cheese making. Preparation method of cheddar cheese.

Condensed and evaporated milk: Definition, composition & standards. Condensing operations.

Ice Cream: Ingredients used in ice cream and their role in processing. Manufacturing process. Defects of ice cream, their causes and remedies.

UNIT-III

Indigenous milk products: Heat desiccated milk products: khoa, basundi etc.; Acid coagulated products|: chhana, chakka, shrikhand, etc.; Indigenous milk based sweets, Fermented products: dahi, lassi.

Books Recommended:

1. Outlines of Dairy Technology by Sukumar De, 1980, Oxford University Press, New Delhi.
2. Alan H. Varnam, (2012), "Milk and Milk Products: Technology, chemistry and microbiology", Springer Science & Business Media Publishers.
3. Robinson, R. K., (2012), "Modern Dairy Technology: Volume 2 Advances in Milk Products", Springer Science & Business Media Publishers.

Bachelor of Vocation (B.VOC.) FOOD PROCESSING SEMESTER – IV

SESSION 2021-22

BVFP-406 FOOD PACKAGING

Time: 3 Hours

Max. Marks: 60

Theory Marks: 45

Internal Marks: 15

Instructions for the Paper Setters:

Theory: – Question paper will contain eight questions in all and students will be asked to attempt five questions. All questions will carry equal marks. Question no. 1 will be objective type and compulsory.

Theory:

UNIT-I

Packaging Technology: Definitions, functions of packaging and packaging materials.

Properties of materials such as tensile strength, bursting strength, tearing resistance, puncture resistance, impact strength and tear strength.

Barrier properties of packaging materials: Gas transmission rate (GTR), water vapour transmission rate (WVTR)

UNIT-II

Paper: Manufacturing of paper and types of papers

Glass: composition, properties, types of closures, methods of bottle making.

Metals: Manufacturing of Tinfoil containers and tinning process

UNIT-III

Plastics: Types of plastic films, laminates, edible films, biodegradable plastics.

New trends in food packaging: Aseptic processing of food products, Vacuum packaging, Gas packaging

Books Recommended:

1. Cruess, W.V. Commercial Fruit & Vegetable Products. Allied Scientific Publishers, New Delhi. 2003
2. Davis, E.G. Evaluation of tin & plastic containers for foods. CBS Publishers, New Delhi. 2004
3. Gopal T.K.S. Seafood packaging, CIFT, Matsyapuri Cochin, 2007
4. Potter, N. N, Hotchkiss, J. H. Food Science. CBS Publishers, New Delhi. 2000.
5. Sacharow, S., Griffin, R.C. Food Packaging. AVI Publishing Company, West Port, Connecticut. 2000
6. Srilakshmi, B. Food Science. New Age International Publishers, New Delhi, 2003

Bachelor of Vocation (B.Voc.) FOOD PROCESSING SEMESTER – IV
SESSION 2021-22

BVFP- 407: EXPERIMENTS IN BAKERY AND CONFECTIONARY TECHNOLOGY

Time: 3 Hours

Max. Marks: 40

Practical Marks: 30

Internal Marks: 10

Instructions for the Paper Setters:

Practical – Question Paper will be set with the mutual consent of Internal and External Examiners on the spot.

Practicals:

1. Preparation of different types of Bread.
2. Principle and preparation of cakes.
3. Preparation of cookies
4. Quality and sensory evaluation of baked products.
5. Preparation of Hard and soft ball candy
6. Preparation of Caramel.
7. Preparation of fondant
8. Preparation of jaggery and jaggery products

Books Recommended:

1. Durbey, S.C. Basic Baking: Science and Craft. Gujarat Agricultural University, Anand (Gujrat).1979
2. Kent, N.L. 1. Technology of Cereals.3rdedn.Pergamon Press, Oxford, UK 1983.

Bachelor of Vocation (B.Voc.) FOOD PROCESSING SEMESTER – IV

SESSION 2021-22

BVFP-408: EXPERIMENTS IN DAIRY TECHNOLOGY-II

Time: 3 Hours

Max. Marks: 40

Practical Marks: 30

Internal Marks: 10

Instructions for the Paper Setters:

Practical – Question Paper will be set with the mutual consent of Internal and External Examiners on the spot.

Practicals:

1. To study the construction and working of a cream separator.
2. Cream separation.
3. Preparation of Butter.
4. Preparation of ghee from butter.
5. Preparation of ice-cream and kulfi,
6. Preparation of milk sweets: burfi, gulabjamun,
7. Judging and grading of condensed milk products
8. Visit to N.D.R.I., Karnal.

Books Recommended:

1. Outlines of Dairy Technology by Sukumar De, 1980, Oxford University Press, New Delhi.
2. Alan H. Varnam, (2012), "Milk and Milk Products: Technology, chemistry and microbiology", Springer Science & Business Media Publishers.
3. Robinson, R. K., (2012), "Modern Dairy Technology: Volume 2 Advances in Milk Products", Springer Science & Business Media Publishers.

Bachelor of Vocation (B.Voc.) FOOD PROCESSING SEMESTER – IV
SESSION 2021-22
BVFP-409: EXPERIMENTS IN FOOD PACKAGING

Time: 3 Hours

Max. Marks: 40
Practical Marks: 30
Internal Marks: 10

Instructions for the Paper Setters:

Practical – Question Paper will be set with the mutual consent of Internal and External Examiners on the spot.

Practicals:

Practicals:

1. Identification and testing of packaging materials.
2. Determination of wax from wax paper.
3. Testing of lacquered tin plate sheets.
4. Measurement of tin coating weight by Clarke's method.
5. To determine grease resistance of packaging materials.
6. To determine chemical resistance of packaging materials.
7. Determination of water vapour transmission rate of packaging material.
8. Packaging the food material in seal and shrink packaging machine and study its shelf life.
9. Testing the strength of glass containers by thermal shock test.
10. Determination of COBB's value of paper board.

Books Recommended:

1. Cruess, W.V. Commercial Fruit & Vegetable Products. Allied Scientific Publishers, New Delhi. 2003
2. Davis, E.G. Evaluation of tin & plastic containers for foods. CBS Publishers, New Delhi. 2004
3. Gopal T.K.S. Seafood packaging, CIFT, Matsyapuri Cochin, 2007

Bachelor of Vocation (B.Voc.) FOOD PROCESSING SEMESTER – IV
SESSION 2021-22

BVFP-410 INDUSTRIAL TRAINING

SATISFACTORY/UNSATISFACTORY

Note: Submission of report and certificate after completion of Training.

A student will undergo 1 month compulsory training in any Food Processing Industry/ Institute concerned with processing and quality analysis of foods. After the completion of training the student will submit certificate issued by the industry/institute to the Head of concerned department. Student will have to submit training report within 2 weeks after the completion of training to the department. The report will be evaluated as satisfactory/Unsatisfactory.