FACULTY OF COMPUTER SCIENCE & IT

SYLLABUS

of

Bachelor of Computer Applications

(Semester I - II)

(Under Continuous Evaluation System)

(12+3 System of Education)

Session: 2019-20

The Heritage Institution

KANYA MAHA VIDYALAYA JALANDHAR
(Autonomous)

PROGRAMME SPECIFIC OUTCOMES

Bachelor of Computer Applications
(Session 2019-20)

PSO1: Provide expertise in field of Information Technology, different software and web development languages for solution of IT-based problems.

PSO2: Professional development in IT industry through ethical, defined and innovative techniques.

PS03: Achieve leadership role and can work on multidisciplinary group as a team player.

Kanya Maha Vidyalaya, Jalandhar (Autonomous)

SCHEME AND CURRICULUM OF EXAMINATIONS OF THREE YEAR DEGREE PROGRAMME

Bachelor of Computer Applications
Session 2019-20

BCA Semester - I							
Course Code	**Course Name**	**Course Type**	**Marks**				**Examination Time (in Hours)**
			Total	**Ext.**		**CA**	
				L	**P**		
BCAL-1421 / BCAL-1031/ BCAL-1431	Punjabi (Compulsory) / [1] Basic Punjabi/ [2]Punjab History & Culture	C	50	40	-	10	3
BCAL-1102	Communication Skills in English	C	50	40	-	10	3
BCAL-1113	Introduction to Programming – C	C	75	60	-	15	3
BCAL-1114	Introduction to Computers and Information Technology	C	75	60	-	15	3
BCAL-1335	Applied & Discrete Mathematics	C	75	60	-	15	3
BCAP-1116	Practical–I (MS Office 2010 and Basic C Programming)	C	75	-	60	15	3
AECD-1161	[3]Drug Abuse: Problem, Management and Prevention (Compulsory)	AC	50	40	-	10	3
SECF-1492	[3]Foundation Course	AC	25	20	-	05	1
	Total		400				

Note:

C - Compulsory

AC - Audit Course

[1] Special paper in lieu of Punjabi (Compulsory)

[2] Special paper in lieu of Punjabi (Compulsory) for those students who are not domicile of Punjab.

[3]**Marks of these papers will not be added in total marks and only grades will be provided.**

Kanya Maha Vidyalaya, Jalandhar (Autonomous)

SCHEME AND CURRICULUM OF EXAMINATIONS OF THREE YEAR DEGREE PROGRAMME

Bachelor of Computer Applications

Session 2019-20

Course Code	Course Name	Course Type	Marks				Examination Time (in Hours)
			Total	**Ext.**		**CA**	
				L	**P**		
BCAL-2421 / BCAL-2031/ BCAL-2431	Punjabi (Compulsory) [1]Basic Punjabi [2] Punjab History and Culture (C 321 to 1000 A.D.)	C	50	40	-	10	3
BCAM-2102	Communication Skills in English	C	50	25	15	10	3 + 3
BCAL-2113	Introduction to Programming – C ++	C	75	60	-	15	3
BCAL-2114	Principles of Digital Electronics	C	75	60	-	15	3
BCAL-2115	Numerical Methods & Statistical Techniques	C	75	60	-	15	3
BCAP-2116	Practical – I (Advanced C++ Programming)	C	75	-	60	15	3
AECD-2161	[3]Drug Abuse: Problem, Management and Prevention (Compulsory)	AC	50	40	-	10	3
SECM-2502	[3]Moral Education	AC	25	20	-	05	1
	Total		400				

BCA Semester - II

Note:

C - Compulsory

AC - Audit Course

[1] Special paper in lieu of Punjabi (Compulsory)

[2] Special paper in lieu of Punjabi (Compulsory) for those students who are not domicile of Punjab.

[3]**Marks of these papers will not be added in total marks and only grades will be provided.**

Kanya Maha Vidyalaya, Jalandhar (Autonomous)

SCHEME AND CURRICULUM OF EXAMINATIONS OF THREE YEAR DEGREE PROGRAMME

Bachelor of Computer Applications
Session 2019-20

Course Code	Course Name	Course Type	Marks				Examination Time (in Hours)
			Total	Ext.		CA	
				L	P		
BCAL-3111	Computer Architecture	C	75	60	-	15	3
BCAL-3112	Database Management System	C	75	60	-	15	3
BCAL-3113	Computational Problem Solving Using Python	C	75	60	-	15	3
BCAP-3114	Practical Lab - Python	C	50	-	40	10	3
BCAP-3115	Practical Lab - Oracle	C	25	-	20	5	3
AECE - 3221	* Environmental Studies (Compulsory)	AC	100	60	20	20	3
SECP - 3512	* Personality Development	AC	25	20	-	05	1
	Total		300				

Note:

C - Compulsory

AC - Audit Course

* Marks of these papers will not be included in the Total Marks

Kanya Maha Vidyalaya, Jalandhar (Autonomous)

SCHEME AND CURRICULUM OF EXAMINATIONS OF THREE YEAR DEGREE PROGRAMME

Bachelor of Computer Applications

Session 2019-20

Course Code	Course Name	Course Type	Marks				Examination Time (in Hours)
			Total	Ext.		CA	
				L	P		
BCAL-4111	Data Structure	C	75	60	-	15	3
BCAL-4112	Information Systems	C	75	60	-	15	3
BCAL-4113	Internet Applications	C	75	60	-	15	3
BCAL-4114	System Software	C	75	60	-	15	3
BCAP-4115	Lab – Data Structure	C	50	-	40	10	3
BCAP-4116	Lab – Web Designing	C	50	-	40	10	3
SECS - 4522	* Social Outreach	AC	25	-	25	-	1
	Total		400				

Note:

C - Compulsory

AC - Audit Course

* Marks of these papers will not be added in total marks and only grades will be provided.

(Session 2019-20)
PUNJABI (COMPULSORY)
COURSE CODE: BCAL–1421

Course Outcomes :

ਆਤਮ ਅਨਾਤਮ' ਪੁਸਤਕ ਦੇ ਕਵਿਤਾ ਭਾਗ ਨੂੰ ਪੜ੍ਹਾਉਣ ਦਾ ਮਨੋਰਥ ਵਿਦਿਆਰਥੀਆਂ ਅੰਦਰ ਕਵਿਤਾ ਪ੍ਰਤੀ ਦਿਲਚਸਪੀ, ਸੂਝ ਨੂੰ ਪੈਦਾ ਕਰਨਾ ਹੈ ਤਾਂ ਕਿ ਉਹ ਆਧੁਨਿਕ ਦੌਰ ਵਿਚ ਚੱਲ ਰਹੀਆਂ ਕਾਵਿ ਧਾਰਾਵਾਂ ਅਤੇ ਕਵੀਆਂ ਬਾਰੇ ਗਿਆਨ ਹਾਸਿਲ ਕਰ ਸਕਣ। ਇਸ ਦਾ ਹੋਰ ਮਨੋਰਥ ਕਵਿਤਾ ਦੀ ਵਿਆਖਿਆ, ਵਿਸ਼ਲੇਸ਼ਣ ਤੇ ਮੁਲੰਕਣ ਦੀ ਪ੍ਰਕਿਰਿਆ ਤੋਂ ਜਾਣੂ ਕਰਾਉਣਾ ਵੀ ਹੈ ਤਾਂ ਕਿ ਉਹ ਸਮਕਾਲੀ ਸਮਾਜ ਦੀਆਂ ਸਮੱਸਿਆਵਾਂ ਨੂੰ ਸਮਝ ਸਕਣ ਅਤੇ ਆਲੋਚਨਾਤਮਕ ਦ੍ਰਿਸ਼ਟੀ ਬਣਾ ਸਕਣ।

> ➤ **ਇਤਿਹਾਸਕ ਯਾਦਾਂ** (ਇਤਿਹਾਸਕ ਲੇਖ ਸੰਗ੍ਰਹਿ) ਪੁਸਤਕ ਨੂੰ ਸਿਲੇਬਸ ਵਿਚ ਸ਼ਾਮਿਲ ਕਰ ਕੇ ਵਿਦਿਆਰਥੀਆਂ ਅੰਦਰ ਪੜ੍ਹਨ ਦੀ ਰੁਚੀ ਨੂੰ ਪੈਦਾ ਕਰਨਾ ਹੈ ਅਤੇ ਮੁੱਲਵਾਨ ਇਤਿਹਾਸ ਤੋਂ ਜਾਣੂ ਕਰਵਾਉਣਾ ਹੈ।

> ➤ ਪੈਰ੍ਹਾ ਰਚਨਾ ਅਤੇ ਪੈਰ੍ਹਾ ਪੜ੍ਹ ਕੇ ਪ੍ਰਸ਼ਨਾਂ ਦੇ ਉਤਰ ਦੇਣ ਦਾ ਮਨੋਰਥ ਵਿਦਿਆਰਥੀਆਂ ਦੀ ਬੁੱਧੀ ਨੂੰ ਤੀਖਣ ਕਰਦਿਆਂ ਉਨਾਂ ਦੀ ਲਿਖਣ ਪ੍ਰਤਿਭਾ ਨੂੰ ਉਜਾਗਰ ਕਰਨਾ ਹੈ।

> ➤ ਪੁਨੀ ਵਿਉਂਤ ਪੜ੍ਹਨ ਨਾਲ ਵਿਦਿਆਰਥੀ ਪੁਨੀਆਂ ਦੀ ਉਚਾਰਨ ਪ੍ਰਣਾਲੀ ਤੋਂ ਵਾਕਫ਼ ਹੋਣਗੇ।

> ➤ ਭਾਸ਼ਾ ਵੰਨਗੀਆਂ ਨੂੰ ਪੜ੍ਹਾਉਣ ਦਾ ਮਨੋਰਥ ਵਿਦਿਆਰਥੀਆਂ ਅੰਦਰ ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਦੀ ਅਮੀਰੀ ਦਾ ਅਤੇ ਬਾਰੀਕੀਆਂ ਨੂੰ ਸਮਝਣ ਲਈ ਵੱਖਰੇ - ਵੱਖਰੇ ਸਿਧਾਂਤਾਂ ਦਾ ਵਿਕਾਸ ਕਰਨਾ ਹੈ।

Max. Marks: 50

Time: 3 Hrs
Theory:40
CA:10
Pass Percentage: 35%

ਅੰਕ ਵੰਡ ਅਤੇ ਪਰੀਖਿਅਕ ਲਈ ਹਦਾਇਤਾਂ

1.   ਪ੍ਰਸ਼ਨ ਪਤਰ ਦੇ ਚਾਰ ਭਾਗ ਹੋਣਗੇ। ਹਰ ਭਾਗ ਵਿਚ ਦੋ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ।

2.   ਵਿਦਿਆਰਥੀ ਨੇ ਕੁਲ ਪੰਜ ਪ੍ਰਸ਼ਨ ਕਰਨੇ ਹਨ। ਹਰ ਭਾਗ ਵਿਚੋਂ ਇਕ ਪ੍ਰਸ਼ਨ ਲਾਜ਼ਮੀ ਹੈ।   ਪੰਜਵਾਂ ਪ੍ਰਸ਼ਨ ਕਿਸੇ ਵੀ ਭਾਗ ਵਿਚੋਂ ਕੀਤਾ ਜਾ ਸਕਦਾ ਹੈ।

3.   ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦੇ 08 ਅੰਕ ਹਨ।

4.   ਪੇਪਰ ਸੈਟ ਕਰਨ ਵਾਲਾ ਜੇਕਰ ਚਾਹੇ ਤਾਂ ਪ੍ਰਸ਼ਨਾਂ ਦੀ ਵੰਡ ਅਗੋਂ ਵਧ ਤੋਂ ਵਧ ਚਾਰ ਉਪ ਪ੍ਰਸ਼ਨਾਂ ਵਿਚ ਕਰ ਸਕਦਾ ਹੈ।

ਪਾਠ ਕ੍ਰਮ ਅਤੇ ਪਾਠ ਪੁਸਤਕਾਂ

ਸੈਕਸ਼ਨ-ਏ

ਆਤਮ ਅਨਾਤਮ (ਕਵਿਤਾ ਭਾਗ),(ਸੰਪ. ਸੁਹਿੰਦਰ ਬੀਰ ਅਤੇ ਵਰਿਆਮ ਸਿੰਘ ਸੰਧੂ) ਗੁਰੂ   ਨਾਨਕ ਦੇਵ ਯੂਨੀਵਰਸਿਟੀ, ਅੰਮ੍ਰਿਤਸਰ।

(ਪ੍ਰਸੰਗ ਸਹਿਤ ਵਿਆਖਿਆ, ਸਾਰ)   08 ਅੰਕ

ਸੈਕਸ਼ਨ-ਬੀ

ਇਤਿਹਾਸਕ ਯਾਦਾਂ (ਇਤਿਹਾਸਕ ਲੇਖ ਸੰਗ੍ਰਹਿ) ਸੰਪਾ. ਸ.ਸ.ਅਮੋਲ,ਪੰਜਾਬੀ ਸਾਹਿਤ ਪ੍ਰਕਾਸ਼ਨ, ਲੁਧਿਆਣਾ। (ਲੇਖ 1 ਤੋਂ 6)

(ਨਿਬੰਧ ਦਾ ਸਾਰ, ਲਿਖਣ-ਸ਼ੈਲੀ)   08 ਅੰਕ

ਸੈਕਸ਼ਨ-ਸੀ

(ੳ) ਪੈਰ੍ਹਾ ਰਚਨਾ

(ੳ) ਪੈਰ੍ਹਾ ਪੜ੍ਹ ਕੇ ਪ੍ਰਸ਼ਨਾਂ ਦੇ ਉਤਰ।   08 ਅੰਕ

ਸੈਕਸ਼ਨ-ਡੀ

(ੲ) **ਪੰਜਾਬੀ ਧੁਨੀ ਵਿਉਂਤ** : ਉਚਾਰਨ ਅੰਗ, ਉਚਾਰਨ ਸਥਾਨ ਤੇ ਵਿਧੀਆਂ, ਸਵਰ, ਵਿਅੰਜਨ, ਸ਼੍ਰ-ਪ੍ਰਬੰਧ।

(ਅ) **ਭਾਸ਼ਾ ਵੰਨਗੀਆਂ** : ਭਾਸ਼ਾ ਦਾ ਟਕਸਾਲੀ ਰੂਪ, ਭਾਸ਼ਾ ਅਤੇ ਉਪਭਾਸ਼ਾ ਦਾ ਅੰਤਰ, ਪੰਜਾਬੀ ਉਪਭਾਸ਼ਾਵਾਂ ਦੇ ਪਛਾਣ ਚਿੰਨ੍ਹ।   08 ਅੰਕ

Bachelor of Computer Applications (Semester – I)
(Session 2019-20)

BASIC PUNJABI
COURSE CODE: BCAL - 1031

Course Outcomes:

➢ ਮੁੱਢਲੀ ਪੰਜਾਬੀ ਪੜ੍ਹਾਉਣ ਦਾ ਮਨੋਰਥ ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਨੂੰ ਸਿਖਾਉਣ ਦੀ ਪ੍ਰਕਿਰਿਆ ਵਿਚ ਪਾ ਕੇ ਇਕ ਹੋਰ ਭਾਸ਼ਾ ਸਿੱਖਣ ਦੇ ਮੌਕੇ ਪ੍ਰਦਾਨ ਕਰਨਾ ਹੈ।

➢ ਇਸ ਵਿਚ ਵਿਦਿਆਰਥੀ ਨੂੰ ਬਾਰੀਕਬੀਨੀ ਨਾਲ ਭਾਸ਼ਾ ਦਾ ਅਧਿਐਨ ਕਰਵਾਇਆ ਜਾਵੇਗਾ।

➢ ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਪੰਜਾਬੀ ਸ਼ਬਦ ਰਚਨਾ ਤੋਂ ਜਾਣੂ ਕਰਵਾਇਆ ਜਾਵੇਗਾ।

➢ ਮੁੱਢਲੀ ਪੰਜਾਬੀ ਪੜ੍ਹਾਉਣ ਦਾ ਮਨੋਰਥ ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਨਿੱਤ ਵਰਤੋਂ ਦੀ ਪੰਜਾਬੀ ਸ਼ਬਦਾਵਲੀ ਬਾਰੇ ਦੱਸਣਾ ਹੈ।

➢ ਮੁੱਢਲੀ ਪੰਜਾਬੀ ਪੜ੍ਹਾਉਣ ਦਾ ਮਨੋਰਥ ਵਿਦਿਆਰਥੀਆਂ ਦਾ ਸ਼ਬਦ ਘੇਰਾ ਵਿਸ਼ਾਲ ਕਰਨਾ ਹੈ।

➢ ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਪੰਜਾਬੀ ਵਿਚ ਹਫ਼ਤੇ ਦੇ ਸਤ ਦਿਨਾਂ ਦੇ ਨਾਂ, ਬਾਰ੍ਹਾਂ ਮਹੀਨਿਆਂ ਦੇ ਨਾਂ, ਰੁੱਤਾਂ ਦੇ ਨਾਂ, ਇਕ ਤੋਂ ਸੌ ਤਕ ਗਿਣਤੀ ਸ਼ਬਦਾਂ ਵਿਚ ਸਿਖਾਉਣਾ ਹੈ।

Max. Marks: 50

Time: 3 Hrs   **Theory: 40**
                                                        CA: 10
                                       Pass Percentage: 35%

ਅੰਕ ਵੰਡ ਅਤੇ ਪਰੀਖਿਅਕ ਲਈ ਹਦਾਇਤਾਂ

1.   ਪ੍ਰਸ਼ਨ ਪਤਰ ਦੇ ਚਾਰ ਭਾਗ ਹੋਣਗੇ। ਹਰ ਭਾਗ ਵਿਚ ਦੋ ਪ੍ਰਸ਼ਨ ਪੁਛੇ ਜਾਣਗੇ।

2.   ਵਿਦਿਆਰਥੀ ਨੇ ਕੁਲ ਪੰਜ ਪ੍ਰਸ਼ਨ ਕਰਨੇ ਹਨ। ਹਰ ਭਾਗ ਵਿਚੋਂ ਇਕ ਪ੍ਰਸ਼ਨ ਲਾਜਮੀ ਹੈ।
       ਪੰਜਵਾਂ ਪ੍ਰਸ਼ਨ ਕਿਸੇ ਵੀ ਭਾਗ ਵਿਚੋਂ ਕੀਤਾ ਜਾ ਸਕਦਾ ਹੈ।

3.   ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦੇ ਅੱਠ ਅੰਕ ਹਨ।

4.   ਪੇਪਰ ਸੈਟ ਕਰਨ ਵਾਲਾ ਜੇਕਰ ਚਾਹੇ ਤਾਂ ਪ੍ਰਸ਼ਨਾਂ ਦੀ ਵੰਡ ਅਗੋਂ ਵਧ ਤੋਂ ਵਧ ਚਾਰ ਉਪ
       ਪ੍ਰਸ਼ਨਾਂ ਵਿਚ ਕਰ ਸਕਦਾ ਹੈ।

ਪਾਠ ਕ੍ਰਮ

ਸੈਕਸ਼ਨ ਏ

ਪੈਂਤੀ ਅਖਰੀ, ਅਖਰ ਕ੍ਰਮ, ਪੈਰ ਬਿੰਦੀ ਵਾਲੇ ਵਰਣ ਅਤੇ ਪੈਰ ਵਿਚ ਪੈਣ ਵਾਲੇ ਵਰਣ ਅਤੇ
ਮਾੜਵਾਂ (ਮੁਢਲੀ ਜਾਣ ਪਛਾਣ) ਲਗਾਖਰ (ਬਿੰਦੀ, ਟਿਪੀ, ਅਧਕ) : ਪਛਾਣ ਅਤੇ ਵਰਤੋਂ   ।
08ਅੰਕ

ਸੈਕਸ਼ਨ ਬੀ

ਪੰਜਾਬੀ ਸ਼ਬਦ ਬਣਤਰ : ਮੁਢਲੀ ਜਾਣ ਪਛਾਣ (ਸਾਧਾਰਨ ਸ਼ਬਦ, ਸੰਯੁਕਤ ਸ਼ਬਦ, ਮਿਸ਼ਰਤ ਸ਼ਬਦ, ਮੂਲ ਸ਼ਬਦ, ਅਗੇਤਰ ਅਤੇ ਪਿਛੇਤਰ)   08ਅੰਕ

ਸੈਕਸ਼ਨ ਸੀ

ਨਿਤ ਵਰਤੋਂ ਦੀ ਪੰਜਾਬੀ ਸ਼ਬਦਾਵਲੀ : ਬਾਜ਼ਾਰ, ਵਪਾਰ, ਰਿਸ਼ਤੇਨਾਤੇ, ਖੇਤੀ ਅਤੇ ਹੋਰ ਧੰਦਿਆਂ ਆਦਿ ਨਾਲ ਸੰਬੰਧਤ।   08 ਅੰਕ

ਸੈਕਸ਼ਨ ਡੀ

ਹਫਤੇ ਦੇ ਸਤ ਦਿਨਾਂ ਦੇ ਨਾਂ, ਬਾਰ੍ਹਾਂ ਮਹੀਨਿਆਂ ਦੇ ਨਾਂ, ਰੁਤਾਂ ਦੇ ਨਾਂ, ਇਕ ਤੋਂ ਸੌ ਤਕ ਗਿਣਤੀ ਸ਼ਬਦਾਂ ਵਿਚ ।

08ਅੰਕ

(Session 2019-20)
PUNJAB HISTORY & CULTURE
COURSE CODE :BCAL–1431

COURSE OUTCOMES

After completing Semester I and course on Punjab History and Culture Students of History will be able to identify a complete grasp on the sources & writings of Ancient Indian History of Punjab.

1. Identify and describe the emergence of earliest civilizations in : Indus Valley Civilization and Aryan Societies.
2. Identify and analyse the Buddhist, Jain and Hindu faith in the Punjab
3. Analyse the emergence of Early Aryans and Later Vedic Period, their Society, Culture, Polity and Economy
4. To make students understand the concepts of two faiths Jainism and Buddhism, its principles and their application in present times

Bachelor of Computer Applications (Semester – I)
(Session 2019-20)
PUNJAB HISTORY & CULTURE

(From Earliest Times to C 320)
(Special Paper in lieu of Punjabi compulsory)

COURSE CODE :BCAL–1431

Time: 3 Hrs

Max. Marks: 50
Theory: 40
CA: 10
Pass Percentage: 35%

Instructions for the Paper Setters

Question paper shall consist of four Units. Candidates shall attempt 5 questions in all, by at least selecting One Question from each section and the 5th question may be attempted from any of the four sections. Each question will carry 8 marks.

Unit A

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

Unit- B

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

Section C

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

Section D

7. Teaching 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. 1966.

Bachelor of Computer Applications (Semester – I)
(Session 2019-20)
COMMUNICATION SKILL IN ENGLISH
COURSE CODE :BCAL–1102

Course Outcomes:

After passing this course the student will develop the following Skills:

CO 1: Reading skills that will facilitate them to become an efficient reader.

CO 2: The ability to realise not only language productivity but also the pleasure of being able to articulate well.

CO 3: The power to analyse, interpret and infer the ideas in the text.

CO 4: The ability to have a comprehensive understanding of the ideas in the text and enhance their critical thinking.

CO 5: Writing skills of students which will make them proficient enough to express ideas in clear and grammatically correct English.

CO 6: Ability to plan, organise and present ideas coherently on a given topic.

CO 7: The skill to use an appropriate style and format in writing letters (formal and informal.)

Bachelor of Computer Applications (Semester – I)
(Session 2019-20)
COMMUNICATION SKILL IN ENGLISH
COURSE CODE :BCAL–1102

Time: 3 Hours

Max. Marks: 50
Theory: 40 Marks
CA: 10 Marks

Instructions for the paper setter and distribution of marks:

The question paper will consist of four sections and distribution of marks will be as under:

Section-A: The question of theoretical nature will be set from Unit I of the syllabus with internal choice and it will consist of 8 marks.

Section-B: Two comprehension passages will be given to the students based on the Unit II and the candidates will have to attempt one carrying 8 marks.

Section-C: Two questions will be given based on the topics given in the Unit III and the candidates will have to attempt one carrying 8 marks.

Section-D: One out of the two questions will have to be attempted by the candidates based on the topics given in Unit IV of the syllabus. It will carry 8 marks.

Important Note:

The candidate will have to attempt five questions in all selecting one from each section of the question paper and the fifth question may be attempted from any of the four sections.

(8 x 5 = 40)

The syllabus is divided in four units as mentioned below:

Unit I

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

Unit II

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

Activities:

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

Unit III

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

Activities

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

Unit IV

Resume, memo, notices etc.; outline and revision.

Activities:

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

Recommended Books:

1. *Oxford Guide to Effective Writing and Speaking* by John Seely.
2. *Business Communication,* by Sinha, K.K. Galgotia Publishers, 2003.
3. *Business Communication* by Sethi, A and Adhikari, B., McGraw Hill Education 2009.
4. *Communication Skills* by Raman, M. & S. Sharma, OUP, New Delhi, India (2011).
5. *English Grammar in Use: A Self Study Reference and Practice Book Intermediate Learners Book* by Raymond Murphy, Cambridge University Press.

INTRODUCTION TO PROGRAMMING – C
COURSE CODE:BCAL–1113

Course Outcome:

After passing course the student will be able to:

CO1: Understand formulation of algorithms and flowcharts for problem solution and different programming constructs.

CO2: Have knowledge of execution flow of a C program for programming and maintenance.

CO3: Apply programming concepts to provide solution in different problem domains.

Bachelor of Computer Applications (Semester – I)
(Session 2019-20)
INTRODUCTION TO PROGRAMMING – C
COURSE CODE: BCAL–1113

Max. Marks: 75
Theory: 60
CA: 15

Time: 3 Hrs   Pass % = 35%

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Instructions for Paper Setter -

Eight questions of equal marks are to set, two in each of the four sections (A-D). Questions of Sections A-D should be set from Units I-IV of the syllabus respectively. Questions may be divided 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

UNIT I
Fundamentals: Character set, Identifiers and Key Words, Data types, Constants, Variables,Expressions, Statements, Symbolic Constants.

Operations and Expressions: Arithmetic operators, Unary operators, Relational Operators, Logical Operators, Assignment and Conditional Operators, Library functions. Data Input and Output statements

UNIT II
Control Statements: Preliminaries, While, Do–while and For statements, Nested loops, If–else, Switch, Break – Continue statements.

Program Structure Storage Class: Automatic, external and static variables, multiple programs, more about library functions.

UNIT III
Functions: Brief overview, defining, accessing functions, passing arguments to function, specifying argument data types, function prototypes, recursion.

Arrays: Defining, processing an array, passing arrays to a function, multi–dimensional arrays.

Strings: String declaration, string functions and string manipulation

UNIT IV

Structures & Unions: Defining and processing a structure, user defined data types, structures and pointers, passing structures to functions, self referenced structure, unions.

Pointers: Fundamentals, pointer declaration, passing pointer to a function, pointer and one dimensional arrays, operation on pointers, pointers & multi–dimensional arrays of pointers, passing functions, other functions, more about pointer declarations.

References:
1. Balaguruswamy: "Programming in ANSIC".
2. Scaum Outline Series: "Programming in C".
3. Dennis & Ritchie: "Programming inC".
4. Stephen G. Kochar: "C Programming".

(Session 2019-20)
INTRODUCTION TO COMPUTERS AND INFORMATION TECHNOLOGY
COURSE CODE :BCAL–1114

Course Outcome:

After passing course the student will be able to:

CO1: Have knowledge of Computer fundamentals, operating system concepts and office automation software.

CO2: Analyze, design and implement solutions to various problems using algorithms, flowcharts, decision tables and pseudo codes.

CO3: Apply office automation software to create professional and academic documents and presentations.

Bachelor of Computer Applications (Semester – I)
(Session 2019-20)
INTRODUCTION TO COMPUTERS AND INFORMATION TECHNOLOGY
COURSE CODE :BCAL–1114

Max. Marks: 75
Theory: 60
CA: 15

Time: 3 Hrs
Pass % = 35%

Instructions for Paper Setter -

Eight questions of equal marks are to set, two in each of the four sections (A-D). Questions of Sections A-D should be set from Units I-IV of the syllabus respectively. Questions may be divided 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

UNIT-I
Introduction to Computers and its Applications:
- Computer as a system, ba sic concepts, functional units and their inter relation.
- Milestones in Hardware and Software.
- Batch oriented / on–line / real time applications.
- Application of computers.

UNIT-II

Interacting with the Computer:
Input Devices: Keyboard, mouse, pens, touch screens, Bar Code reader, joystick, source data automation, (MICR, OMR, OCR), screen assisted data entry: portable / handheld terminals for data collection, vision input systems.

Output Devices: Monitor, Serial line page printers, plotters, voice response units.

UNIT-III

Data Storage Devices and Media: Primary storage (Storage addresses and capacity, type of memory), Secondary storage, Magnetic storage devices and Optical Storage Devices.

Word Processor using Microsoft Office: Overview, creating, saving, opening, importing, exporting and inserting files, formatting pages, paragraphs and sections, indents and outdents, creating lists and numbering. Headings, styles, fonts and font size Editing, positioning and viewing texts, Finding and replacing text, inserting page breaks, page numbers, book marks, symbols and dates. Using tabs and tables, header, footer and printing.

UNIT-IV

Presentation Software using Microsoft Office: Presentation overview, entering information, Presentation creation, opening and saving presentation, inserting audio and video.
Spreadsheet using Microsoft Office: Spreadsheet overview, Editing, Formatting, Creating formulas, Graphs.

Text/References:
1. Computer Fundamentals – P.K. Sinha.
2. Introduction to Computers – N. Subramanian.
3. Introduction to Computers – Peter Norton Mcgraw Hill.
4. MS–Office _ BPB Publications.
5. Windows Based Computer Courses Gurvinder Singh &Rachpal Singh, Kalyani Pub.
6. Ebooks at OpenOffice.org
7. A Conceptual Guide to OpenOffice.org3, 2nd Edition, R. Gabriel Gurley

Bachelor of Computer Applications (Semester – I)
(Session 2019-20)
APPLIED & DISCRETE MATHEMATICS
COURSE CODE:BCAL–1335

Course Outcome:
Student will be able to:

CO1: Have knowledge of matrices, sets, relations, propositional logic and Boolean algebra.

CO 2: represents world knowledge in symbolic notation through propositional calculus.

CO 3: Apply discrete mathematical concepts to obtain analytical and numerical solutions.

Bachelor of Computer Applications (Semester – I)
(Session 2019-20)
APPLIED & DISCRETE MATHEMATICS
COURSE CODE: BCAL–1335

Max. Marks: 75
Theory: 60
CA: 15
Time: 3 Hrs   Pass % = 35%

Instructions for Paper Setter -

Eight questions of equal marks are to set, two in each of the four sections (A-D). Questions of Sections A-D should be set from Units I-IV of the syllabus respectively. Questions may be divided 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

UNIT-I
Sets and Relations: Definition of sets, subsets, complement of a set, universal set, intersection and union of sets, De-Morgan's laws, Cartesian products, Equivalent sets, Countable and uncountable sets, minset, Partitions of sets, Relations: Basic definitions, graphs of relations, properties of relations

UNIT-II
Logic and Propositional Calculus: Proposition and Compound Propositions, basic Logical Operations, Propositions and Truth Tables, Tautologies and Contradictions, Logical Equivalence, Duality law, Algebra of propositions, Conditional and Bi conditional Statements, Arguments, Logical Implication, Propositional Functions, Predicates and Quantifiers, Negation of Quantified Statements, Inference theory of the predicates calculus.

UNIT-III
Boolean Algebra: Boolean algebra and its duality, Duality, Boolean Algebra as Lattices, Boolean identities, sub-algebra, Representation Theorem, Sum-of-Products Form for Sets, Sum - of-Products Form for Boolean Algebra, Minimal Boolean Expressions, Prime Implicants, Boolean Functions, Karnaugh Maps.

UNIT IV
Matrices: Introduction of a Matrix, its different kinds, matrix addition and scalar multiplication, multiplication of matrices, transpose etc. Square matrices, inverse and rank of a square matrix, Matrix Inversion method.

References:

1. Lipschutz, S. and Lipson, M.: Discrete Mathematics (Schaum's outlines Series).

2. Kolman and Busby "Discrete Mathematical structures for Computer Sciences" PHI.

3. Alan Doerr,"Applied Discrete Structures for Computer Science", Galgotia Publications.

4. Trambley, J.P. and Manohar,R: Discrete Mathematical Structures with Applications to Computer Science.

(Session 2019-20)
Practical – I(MS Office 2010 & Basic C Programming)
COURSE CODE :BCAP–1116

Max. Marks: 75
Practical: 60
CA: 15
Time: 3 Hrs   Pass % = 35%

Operational Knowledge of:

1. C Programming
2. Windows Based Operating System
3. MS – OFFICE (Word and Power Point)

Bachelor of Computer Applications (Semester – I)
(Session 2019-20)
DRUG ABUSE: PROBLEM, MANAGEMENT AND PREVENTION
(COMPULSORY PAPER)
COURSE CODE :AECD-1161

Time: 3 Hrs   **Max. Marks: 50**
                                                                        Theory: 40
                                                                            CA: 10

Instructions for the Paper Setter

Eight questions of equal marks are to be set, two in each of the four Sections (A-D). Questions of Sections A-D should be set from Units I-IV of the syllabus respectively. 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.

UNIT-I
1) Meaning of Drug Abuse: Meaning, Nature and Extent of Drug Abuse in India and Punjab.

UNIT-II

2) Consequences of Drug Abuse for:
    Individual : Education, Employment, Income.
    Family : Violence.
    Society : Crime
    Nation : Law and Order problem.
UNIT-III

3) Management of Drug Abuse
Medical management : medication for treatment and to withdrawal effects.

UNIT-IV

4) Psychiatric Management: Counselling, Behavioral and Cognitive therapy.
    Social Management: Family, Group therapy and Environmental Intervention.

References:

1. 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.
4. Kapoor. T. (1985) *Drug epidemic among Indian Youth*, New Delhi: Mittal Pub.
5. Modi, Ishwar and Modi, Shalini (1997) *Drugs: Addiction and Prevention*, Jaipur: Rawat Publication.
6. National Household Survey of Alcohol and Drug abuse. (2003) New Delhi, Clinical Epidemiological Unit, All India Institute of Medical Sciences, 2004.

7. Sain, Bhim 1991, *Drug Addiction Alcoholism,* Smoking obscenity New Delhi: Mittal Publications.
8. Sandhu, Ranvinder Singh, 2009, *Drug Addiction in Punjab*: A Sociological Study. Amritsar: Guru Nanak Dev University.
9. Singh, Chandra Paul 2000. *Alcohol and Dependence among Industrial Workers*: Delhi: Shipra.
10. Sussman, S and Ames, S.L. (2008). *Drug Abuse: Concepts, Prevention and Cessation,* Cambridge University Press.

Course Outcomes:

➢ ਆਤਮ ਅਨਾਤਮ ਪੁਸਤਕ ਦੇ ਕਹਾਣੀ ਭਾਗ ਨੂੰ ਸਿਲੇਬਸ ਵਿਚ ਸ਼ਾਮਿਲ ਕਰ ਕੇ ਵਿਦਿਆਰਥੀਆਂ ਅੰਦਰ ਕਹਾਣੀ ਨੂੰ ਪੜ੍ਹਨ ਦੀ ਰੁਚੀ ਨੂੰ ਪੈਦਾ ਕਰਨਾ ਹੈ ਅਤੇ ਕਹਾਣੀ ਜਗਤ ਨਾਲ ਜੋੜਨਾ ਹੈ।

➢ **ਇਤਿਹਾਸਕ ਯਾਦਾਂ** (ਇਤਿਹਾਸਕ ਲੇਖ ਸੰਗ੍ਰਹਿ) ਪੁਸਤਕ ਨੂੰ ਸਿਲੇਬਸ ਵਿਚ ਸ਼ਾਮਿਲ ਕਰ ਕੇ ਵਿਦਿਆਰਥੀਆਂ ਅੰਦਰ ਪੜ੍ਹਨ ਦੀ ਰੁਚੀ ਨੂੰ ਪੈਦਾ ਕਰਨਾ ਹੈ ਅਤੇ ਮੁੱਲਵਾਨ ਇਤਿਹਾਸ ਤੋਂ ਜਾਣੂ ਕਰਵਾਉਣਾ ਹੈ।

➢ ਸੰਖੇਪ ਰਚਨਾ ਦਾ ਮਨੋਰਥ ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਸਮੇਂ ਅਤੇ ਮਿਹਨਤ ਦੀ ਬੱਚਤ ਕਰਨ ਬਾਰੇ ਦੱਸਣਾ ਹੈ।

➢ ਪੈਰ੍ਹਾ ਪੜ੍ਹ ਕੇ ਪ੍ਰਸ਼ਨਾਂ ਦੇ ਉਤਰ ਦੇਣ ਦਾ ਮਨੋਰਥ ਵਿਦਿਆਰਥੀਆਂ ਦੀ ਬੁੱਧੀ ਨੂੰ ਤੀਖਣ ਕਰਦਿਆਂ   ਉਨਾਂ ਦੀ ਲਿਖਣ ਪ੍ਰਤਿਭਾ ਨੂੰ ਉਜਾਗਰ ਕਰਨਾ ਹੈ।

➢ ਸ਼ਬਦ ਬਣਤਰ ਅਤੇ ਸ਼ਬਦ ਰਚਨਾ ਪੜ੍ਹਨ ਨਾਲ ਵਿਦਿਆਰਥੀ ਇਸਦੇ ਮੁੱਢਲੇ ਸੰਕਲਪਾਂ ਨੂੰ ਆਧਾਰ   ਬਣਾ ਕੇ ਇਹਨਾਂ ਸੰਕਲਪਾਂ ਤੋਂ ਜਾਣੂ ਹੋਣਗੇ ।

➢ ਸ਼ਬਦ ਸ਼੍ਰੇਣੀਆਂ ਨੂੰ ਪੜ੍ਹਾਉਣ ਦਾ ਮਨੋਰਥ ਵਿਦਿਆਰਥੀਆਂ ਅੰਦਰ ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਦੀ ਅਮੀਰੀ ਦਾ ਅਤੇ ਬਾਰੀਕੀਆਂ ਨੂੰ ਸਮਝਣ ਲਈ ਵੱਖਰੇ - ਵੱਖਰੇ ਸਿਧਾਂਤਾਂ ਦਾ ਵਿਕਾਸ ਕਰਨਾ ਹੈ।

➢ ਅਖਾਣ ਅਤੇ ਮੁਹਾਵਰਿਆਂ ਦੀ ਵਰਤੋਂ ਨਾਲ ਗੱਲਬਾਤ ਵਿਚ ਪਰਪੱਕਤਾ ਆਉਂਦੀ ਹੈ।ਇਹ ਵਿਦਿਆਰਥੀਆਂ ਦੀ ਗੱਲਬਾਤ ਵਿਚ ਨਿਖਾਰ ਲਿਆਉਣ ਦਾ ਕੰਮ ਕਰਨਗੇ।

Bachelor of Computer Applications (Semester – II)
(Session 2019-20)
PUNJABI (COMPULSORY)
COURSE CODE :BCAL–2421

<div align="right">

Max. Marks: 50
Theory: 40
CA:10
Pass Percentage 35%

</div>

Time: 3 Hrs

ਅੰਕ ਵੰਡ ਅਤੇ ਪਰੀਖਿਅਕ ਲਈ ਹਦਾਇਤਾਂ

1. ਪ੍ਸ਼ਨ ਪਤਰ ਦੇ ਚਾਰ ਭਾਗ ਹੋਣਗੇ। ਹਰ ਭਾਗ ਵਿਚ ਦੋ ਪ੍ਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ।

2. ਵਿਦਿਆਰਥੀ ਨੇ ਕੁਲ ਪੰਜ ਪ੍ਸ਼ਨ ਕਰਨੇ ਹਨ। ਹਰ ਭਾਗ ਵਿਚੋਂ ਇਕ ਪ੍ਸ਼ਨ ਲਾਜ਼ਮੀ
    ਹੈ। ਪੰਜਵਾਂ ਪ੍ਸ਼ਨ ਕਿਸੇ ਵੀ ਭਾਗ ਵਿਚੋਂ ਕੀਤਾ ਜਾ ਸਕਦਾ ਹੈ।

3. ਹਰੇਕ ਪ੍ਸ਼ਨ ਦੇ 08 ਅੰਕ ਹਨ।

4. ਪੇਪਰ ਸੈਟ ਕਰਨ ਵਾਲਾ ਜੇਕਰ ਚਾਹੇ ਤਾਂ ਪ੍ਸ਼ਨਾਂ ਦੀ ਵੰਡ ਅਗੋਂ ਵਧ ਤੋਂ ਵਧ ਚਾਰ
    ਉਪ ਪ੍ਸ਼ਨਾਂ ਵਿਚ ਕਰ ਸਕਦਾ ਹੈ।

ਪਾਠ ਕ੍ਮ ਅਤੇ ਪਾਠ ਪੁਸਤਕਾਂ

ਸੈਕਸ਼ਨ-ਏ

ਆਤਮ ਅਨਾਤਮ (ਕਹਾਣੀ ਭਾਗ),(ਸੰਪ. ਸੁਹਿੰਦਰ ਬੀਰ ਅਤੇ ਵਰਿਆਮ ਸਿੰਘ ਸੰਧੂ)

ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਯੂਨੀਵਰਸਿਟੀ, ਅੰਮ੍ਰਿਤਸਰ।

(ਵਿਸ਼ਾ-ਵਸਤੂ, ਪਾਤਰ ਚਿਤਰਨ)   08 ਅੰਕ

ਸੈਕਸ਼ਨ-ਬੀ

ਇਤਿਹਾਸਕ ਯਾਦਾਂ (ਇਤਿਹਾਸਕ ਲੇਖ ਸੰਗ੍ਰਹਿ) ਸੰਪਾ. ਸ.ਸ.ਅਮੋਲ,ਪੰਜਾਬੀ ਸਾਹਿਤ ਪ੍ਕਾਸ਼ਨ,
ਲੁਧਿਆਣਾ। (ਲੇਖ 7 ਤੋਂ 12)(ਸਾਰ, **ਲਿਖਣ ਸ਼ੈਲੀ**)   08 ਅੰਕ

ਸੈਕਸ਼ਨ-ਸੀ

(ੳ) **ਸ਼ਬਦ ਬਣਤਰ ਅਤੇ ਸ਼ਬਦ ਰਚਨਾ** : ਪਰਿਭਾਸ਼ਾ, ਮੁਢਲੇ ਸੰਕਲਪ

(ਅ) ਸ਼ਬਦ ਸ਼੍ਰੇਣੀਆਂ   08 ਅੰਕ

ਸੈਕਸ਼ਨ-ਡੀ

(ੳ) ਸੰਖੇਪ ਰਚਨਾ

(ਅ) ਮੁਹਾਵਰੇ ਅਤੇ ਅਖਾਣ   08 ਅੰਕ

Course outcomes :

ਮੁੱਢਲੀ ਪੰਜਾਬੀ ਪੜ੍ਹਾਉਣ ਦਾ ਮਨੋਰਥ ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਨੂੰ ਸਿਖਾਉਣ ਦੀ ਪ੍ਰਕਿਰਿਆ ਵਿਚ ਪਾ ਕੇ ਇਕ ਹੋਰ ਭਾਸ਼ਾ ਸਿੱਖਣ ਦੇ ਮੌਕੇ ਪ੍ਰਦਾਨ ਕਰਨਾ ਹੈ।

➤ ਇਸ ਵਿਚ ਵਿਦਿਆਰਥੀ ਨੂੰ ਬਾਰੀਕਬੀਨੀ ਨਾਲ ਭਾਸ਼ਾ ਦਾ ਅਧਿਐਨ ਕਰਵਾਇਆ ਜਾਵੇਗਾ।

➤ ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਪੰਜਾਬੀ ਸ਼ਬਦ ਰਚਨਾ ਤੋਂ ਜਾਣੂ ਕਰਵਾਇਆ ਜਾਵੇਗਾ।

➤ ਸ਼ਬਦ ਸ਼੍ਰੇਣੀਆਂ ਨੂੰ ਪੜ੍ਹਾਉਣ ਦਾ ਮਨੋਰਥ ਵਿਦਿਆਰਥੀਆਂ ਅੰਦਰ ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਦੀ ਅਮੀਰੀ ਦਾ ਅਤੇ ਬਾਰੀਕੀਆਂ ਨੂੰ ਸਮਝਣ ਲਈ ਵੱਖਰੇ - ਵੱਖਰੇ ਸਿਧਾਂਤਾਂ ਦਾ ਵਿਕਾਸ ਕਰਨਾ ਹੈ।

➤ ਮੁੱਢਲੀ ਪੰਜਾਬੀ ਪੜ੍ਹਾਉਣ ਦਾ ਮਨੋਰਥ ਵਿਦਿਆਰਥੀਆਂ ਦਾ ਸ਼ਬਦ ਘੇਰਾ ਵਿਸ਼ਾਲ ਕਰਨਾ ਹੈ।

➤ ਵਿਦਿਆਰਥੀ ਵਾਕ ਦੀ ਪਰਿਭਾਸ਼ਾ ਅਤੇ ਇਸਦੀ ਬਣਤਰ ਤੋਂ ਜਾਣੂ ਹੋਣਗੇ ਅਤੇ ਭਾਸ਼ਾ ਤੇ ਪਕੜ ਮਜਬੂਤ ਹੋਵੇਗੀ।

➤ ਪੈਰ੍ਹਾ ਰਚਨਾ ਦਾ ਮਨਰੋਥ ਵਿਦਿਆਰਥੀਆਂ ਦੀ ਬੁੱਧੀ ਨੂੰ ਤੀਖਣ ਕਰਦਿਆਂ ਉਨਾਂ ਦੀ ਲਿਖਣ ਪ੍ਰਤਿਭਾ ਨੂੰ ਉਜਾਗਰ ਕਰਨਾ ਹੈ।

➤ ਸੰਖੇਪ ਰਚਨਾ ਕਰਨ ਨਾਲ ਵਿਦਿਆਰਥੀ ਆਪਣੀ ਗੱਲ ਨੂੰ ਸੰਖੇਪ ਵਿਚ ਕਹਿਣ ਦੀ ਜਾਚ ਸਿੱਖਣਗੇ ਅਤੇ ਇਹ ਦਿਮਾਗੀ ਕਸਰਤ ਵਿਚ ਸਹਾਈ ਹੋਵੇਗੀ।

➤ ਘਰੇਲੂ ਅਤੇ ਦਫਤਰੀ ਚਿੱਠੀ ਪੱਤਰ ਲਿਖਣ ਦਾ ਮਨੋਰਥ ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਇਸ ਕਲਾ ਵਿਚ ਨਿਪੁੰਨ ਕਰਨਾ ਹੈ।

➤ ਅਖਾਣ ਅਤੇ ਮੁਹਾਵਰਿਆਂ ਦੀ ਵਰਤੋਂ ਨਾਲ ਗੱਲਬਾਤ ਵਿਚ ਪਰਪੱਕਤਾ ਆਉਂਦੀ ਹੈ।ਇਹ ਵਿਦਿਆਰਥੀਆਂ ਦੀ ਗੱਲਬਾਤ ਵਿਚ ਨਿਖਾਰ ਲਿਆਉਣ ਦਾ ਕੰਮ ਕਰਨਗੇ।

Max. Marks: 50
Time: 3 Hrs
Theory:40
CA:10
Pass Percentage 35%

ਅੰਕ ਵੰਡ ਅਤੇ ਪਰੀਖਿਅਕ ਲਈ ਹਦਾਇਤਾਂ

1. ਪ੍ਰਸ਼ਨ ਪਤਰ ਦੇ ਚਾਰ ਭਾਗ ਹੋਣਗੇ। ਹਰ ਭਾਗ ਵਿਚ ਦੋ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ।

2. ਵਿਦਿਆਰਥੀ ਨੇ ਕੁਲ ਪੰਜ ਪ੍ਰਸ਼ਨ ਕਰਨੇ ਹਨ। ਹਰ ਭਾਗ ਵਿੱਚੋਂ ਇਕ ਪ੍ਰਸ਼ਨ ਲਾਜ਼ਮੀ ਹੈ। ਪੰਜਵਾਂ ਪ੍ਰਸ਼ਨ ਕਿਸੇ ਵੀ ਭਾਗ ਵਿਚੋਂ ਕੀਤਾ ਜਾ ਸਕਦਾ ਹੈ।

3. ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦੇ 08 ਅੰਕ ਹਨ।

4. ਪੇਪਰ ਸੈਟ ਕਰਨ ਵਾਲਾ ਜੇਕਰ ਚਾਹੇ ਤਾਂ ਪ੍ਰਸ਼ਨਾਂ ਦੀ ਵੰਡ ਅਗੋਂ ਵਧ ਤੋਂ ਵਧ ਚਾਰ ਉੱਪ੍ਰਪ੍ਰਸ਼ਨਾਂ ਵਿਚ ਕਰ ਸਕਦਾ ਹੈ।

ਪਾਠ ਕ੍ਰਮ ਝਪ

ਸੈਕਸ਼ਨ ਏ

ਸ਼ਬਦ ਸ਼੍ਰੇਣੀਆਂ : ਪਛਾਣ ਅਤੇ ਵਰਤੋਂ (ਨਾਂਵ, ਪੜਨਾਂਵ, ਕਿਰਿਆ, ਵਿਸ਼ੇਸ਼ਣ, ਕਿਰਿਆ ਵਿਸ਼ੇਸ਼ਣ, ਸਬੰਧਕ, ਯੋਜਕ ਅਤੇ ਵਿਸਮਿਕ)

08 ਅੰਕ

ਸੈਕਸ਼ਨ ਬੀ

ਪੰਜਾਬੀ ਵਾਕ ਬਣਤਰ : ਮੁਢਲੀ ਜਾਣ ਪਛਾਣ

(ੳ) ਸਾਧਾਰਨ ਵਾਕ, ਸੰਯੁਕਤ ਵਾਕ ਅਤੇ ਮਿਸ਼ਰਤ ਵਾਕ (ਪਛਾਣ ਅਤੇ ਵਰਤੋਂ)

(ਅ) ਬਿਆਨੀਆ ਵਾਕ, ਪ੍ਰਸ਼ਨਵਾਚਕ ਵਾਕ ਅਤੇ ਹੁਕਮੀ ਵਾਕ (ਪਛਾਣ ਅਤੇ ਵਰਤੋਂ)

                                                    08 ਅੰਕ

ਸੈਕਸ਼ਨ ਸੀ

ਪੈਰਾ ਰਚਨਾ

ਸੰਖੇਪ ਰਚਨਾ   08 ਅੰਕ

ਸੈਕਸ਼ਨ ਡੀ

ਚਿਠੀ ਪਤਰ (ਘਰੇਲੂ ਅਤੇ ਦਫਤਰੀ)

ਅਖਾਣ ਅਤੇ ਮੁਹਾਵਰੇ   08 ਅੰਕ

Bachelor of Computer Applications (Semester – II)
(Session 2019-20)
PUNJAB HISTORY & CULTURE
COURSE CODE :BCAL–2431

COURSE OUTCOMES

After completing Semester II and course on Ancient History of Punjab, Students of History will be able to identify a complete grasp on the sources & writings of Ancient History of Punjab

1. Analyse the emergence of Mauryan, Gupta empires during the classical age in India
2. To understand the various factors leading to rise and fall of empires and emergence of new dynasties and their Culture, society, administration , polity and religion specifically of Kushans and Vardhanas in the Punjab
3. Students will be adopt in constructing original historical argument based on primary source material research
4. To have grasp on the existing Literature of this period and understand the past developments in the light of present scenario.
5. To enable students to have thorough insight into the various forms/styles of Architecture and synthesis of Indo - Muslim Art and Architecture in Punjab

Bachelor of Computer Applications (Semester – II)
(Session 2019-20)
PUNJAB HISTORY & CULTURE (C 321 to 1000 A.D.)
(Special Paper in lieu of Punjabi compulsory)
COURSE CODE :BCAL–2431

Max. Marks: 50
Time: 3 Hrs   **Theory:40**
CA:10
Pass Percentage 35%

Instructions for the Paper Setters

**Question paper shall consist of four Units. Candidates shall attempt 5 questions in all, by
at least selecting One Question from each unit and the 5ᵗʰ question may be attempted from
any of the four sections. Each question will carry 8 marks.**
Unit-I

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

Unit -II

3. The Panjab under the Gurpta Emperor.
4. The Punjab under the Vardhana Emperors

Unit-III

5. Political Developments 17ᵗʰ Century to 1000 A.D. (Survey of Political)
6. Socio-cultural History of Punjab from 7ᵗʰ 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*, 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. 1966.

Bachelor of Computer Applications (Semester – II)
(Session 2019-20)
COMMUNICATION SKILLS IN ENGLISH
COURSE CODE :BCAM–2102

Course Outcomes:

After passing this course the students will develop the following skills:

CO 1: Enhancement of listening skills with the help of listening exercises based on conversation, news and TV reports.

CO 2: Improvement of speaking skills enabling them to converse in a specific situation.

CO 3: Acquisition of knowledge of phonetics which will help them in learning about correct pronunciation as well as effective speaking.

CO 4: The capability to present themselves well in a job interview.

CO 5: The ability of Note-Taking to be able to distinguish the main points from the supporting details and the irrelevant information from the relevant one.

CO 6: Speaking skills of the students enabling them to take active part in group discussion and present their own ideas.

CO 7: The capability of narrating events and incidents in a logical sequence.

Bachelor of Computer Applications (Semester – II)
(Session 2019-20)
COMMUNICATION SKILLS IN ENGLISH
COURSE CODE :BCAM–2102

Time: 3 Hrs

Max. Marks: 50
Theory:25
Practical: 15
CA:10
Pass Percentage: 35%

Instructions for the paper setters and distribution of marks:

The question paper will consist of four sections and distribution of marks will be as under:

Section-A: Two questions with internal choice will be set from Unit I of the syllabus and these questions will be theoretical in nature corresponding to the syllabus of Section-I. Each will carry 5 marks.

Section-B: Two questions with internal choice will be set from Unit II of the syllabus. One will be theoretical and the second will be practical in nature. Each will carry 5 marks.

Section-C: Two questions with internal choice will be set from Unit III of the syllabus and these will be theoretical in nature. Each will carry 5 marks.

Section-D: Two questions with internal choice will be set from Unit IV of the syllabus. One question will be theoretical in nature and the other will be practical in nature (based on phonetic transcription and stress). Each will carry 5 marks.

Important Note:

The candidate will have to attempt five questions in all selecting one from each section of the question paper and the fifth question may be attempted from any of the four sections. (5 x 5 = 25)

PRACTICAL / ORAL TESTING
Time: 3 hours   Marks: 15

Course Contents:
1. Oral Presentation with/without audio visual aids.
2. Group Discussion.

3. Listening to any recorded or live material and asking oral questions for listening comprehension.

Questions:
1. Oral Presentation will be of 5 to 7 minutes duration. (Topic can be given in advance or it can be of student's own choice). Use of audio visual aids is desirable.
2. Group discussion comprising 8 to 10 students on a familiar topic. Time for each group will be 15 to 20 minutes.

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

Course Contents:

Unit I

Listening Skills: Barriers to listening; effective listening skills; feedback skills.

Activities: Listening exercises – Listening to conversation, News and TV reports

Unit II

Attending telephone calls; note taking and note making.

Activities: Taking notes on a speech/lecture

Unit III

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

Unit IV

The study of sounds of English, stress

Situation based Conversation in English

Essentials of Spoken English

Activities: Giving Interviews

Recommended Books:

1. *Oxford Guide to Effective Writing and Speaking* by John Seely.

2. *Business Communication* by Sethi, A and Adhikari, B., McGraw Hill Education 2009.

3. *Communication Skills* by Raman, M. & S. Sharma, OUP, New Delhi, India (2011).

4. *A Course in Phonetics and Spoken English* by J. Sethi and P.V. Dhamija, Phi Learning.

Bachelor of Computer Applications (Semester – II)
(Session 2019-20)
INTRODUCTION TO PROGRAMMING - C++
COURSE CODE :BCAL–2113

Course Outcomes:

After the completion of this course, a successful student will be able to do the following:

After passing course the student will:

CO1: Have understanding of Object Oriented concepts.

CO2: Apply OOPs concepts to model real world problems for its simplified implementation.

Bachelor of Computer Applications (Semester – II)
(Session 2019-20)
INTRODUCTION TO PROGRAMMING - C++
COURSE CODE :BCAL–2113

Max. Marks: 75
Theory: 60
CA: 15
Time: 3 Hrs   Pass % = 35%

Instructions for Paper Setter -

Eight questions of equal marks are to set, two in each of the four sections (A-D). Questions of Sections A-D should be set from Units I-IV of the syllabus respectively. Questions may be divided 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

UNIT -I
Programming Paradigms: Introduction to the object oriented approach towards programming by discussing Traditional, Structured Programming methodology.

Objects & Classes: Object Definition, Instance, Encapsulation, Data Hiding, Abstraction, Inheritance, Messages, Method, Polymorphism, Classes, Candidate& Abstract Classes to be examples of the Design process.

UNIT -II
Object Oriented Programming using C++: Characteristics of OOP, Overview of C++, I/O using cout and cin, Objects and Classes, Member functions and data, private & public, constructor & destructor, Constructor Overloading, Types of Constructors.

UNIT -III
Function Overloading: Function Overloading, Default Arguments, Ambiguity in Function Overloading.

Operator Overloading: Overloading unary and binary operators, Type Conversion using Operator Overloading

UNIT-IV
Inheritance: Concept of inheritance, Base & derived classes, Access Specifiers, Class Hierarchies, Types of Inheritance with examples.

Virtual Functions and Polymorphism: Virtual functions, friend functions, static function, this pointer, polymorphism, Types of Polymorphism with examples, templates, class templates.

Books:
1. Teach Yourself C++, Herbert Schildth, Tata McGraw Hill.
2. Designing Object Oriented Software RebaccaWirfs - Brock Brian Wilerson, PHI.
3. Object Oriented Programming in Turbo C++, Robert Lafore, Galgotia Publication.
4. Designing Object Oriented Applications using C++ &Booch Method, Robert C. Martin.

(Session 2019-20)
PRINCIPLES OF DIGITAL ELECTRONICS
COURSE CODE :BCAL–2114

Course Outcomes:

After passing the course the student will be able to:

CO1: Have knowledge of number systems, logic gates, combinational and sequential circuits.

CO2: Apply the knowledge to design advanced and complex electronic circuits.

CO3: Demonstrate the internal structure of semiconductor memory.

Bachelor of Computer Applications (Semester – II)
(Session 2019-20)
PRINCIPLES OF DIGITAL ELECTRONICS
COURSE CODE :BCAL–2114

Max. Marks: 75
Theory: 60
CA: 15
Time: 3 Hrs   Pass % = 35%

Instructions for Paper Setter -

Eight questions of equal marks are to set, two in each of the four sections (A-D). Questions of Sections A-D should be set from Units I-IV of the syllabus respectively. Questions may be divided 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

UNIT-I
Number System: Introduction, number conversion system , binary arithmetic, representation of signed binary numbers, 1's and 2's complement, Codes: straight binary code, BCD Code Excess3 Code, Grey Code ASCII, Integer and floating point representation

UNIT- II
Logic Gates and Boolean Algebra: Logic gates, Universal Gates, Boolean algebra and Minimization techniques, canonical forms of Bookean expressions, K-Map

UNIT-III
Combinational Circuits: Adder, Subtracter, Multiplexer, Demultiplexer, Decoeer, Encoder
Sequential Circuits: Flip-flops, clocks and timers, registers, counter

UNIT-IV
Semiconductor memories: Introduction, Static and dynamic devices, read only & random access memory chips, PROMS and EPROMS Address selection logic. Read and write control timing diagrams for ICs

References:
1. Integrated Electronics by Millman, Halkias McGraw Hill.
2. Malvino: Digital Computer Electronics, McGraw Hill.
3. D.A. Hodges & H.G. Jackson, Analysis and Design of Integrated Circuits,

International, 1983.

4. Joph. F. Wakerley, Digital Principles and Practices.

5. Ujjenbeck, John: Digital Electronics: A Modern Approach, Prentice Hall, 1994.

6. Mano, M. Morris: Digital Logic and Computer Design, Edition, 1993.

Bachelor of Computer Applications (Semester – II)
(Session 2019-20)
NUMERICAL METHODS & STATISTICAL TECHNIQUES
COURSE CODE :BCAL–2115

Course Outcomes:

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

CO1: Gain knowledge about mechanics of elementary methods and statistical inference techniques for numerical analysis.

CO2: Demonstrate the application of numerical methods on different platform with the use of programming language.

CO3: Apply the knowledge to solve linear and non-linear equations involved in real world problems.

Bachelor of Computer Applications (Semester – II)
(Session 2019-20)
NUMERICAL METHODS & STATISTICAL TECHNIQUES
COURSE CODE :BCAL–2115

Max. Marks: 75
Theory: 60
CA: 15

Time: 3 Hrs
Pass % = 35%

Instructions for Paper Setter -

Eight questions of equal marks are to set, two in each of the four sections (A-D). Questions of Sections A-D should be set from Units I-IV of the syllabus respectively. Questions may be divided 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

UNIT-I
Introduction:
1. Numerical Methods, Numerical methods versus numerical analysis, Errors and Measures of Errors.
2. Non–linear Equations, Iterative Solutions, Multiple roots and other difficulties, Interpolation methods, Methods of bi–section, False position method, Newton Raphson – Method.
3. Simultaneous Solution of Equations, Gauss Elimination Method Gauss Jordan Method.

UNIT-II
1. Numerical Integration and different Trapezoidal Rule, Simpson's 3/8 Rule.
2. Interpolation and Curve Fitting, Lagrangian Polynomials, Newton's Methods: Forward Difference Method, Backward Difference Method Divided Difference Method.

UNIT-III
Statistical Techniques:
1. Measure of Central Tendency, Mean Arithmetic, Mean geometric, Mean harmonic, Mean, Median, Mode.
2. Measures of dispersion, Mean deviation, Standard deviation, Co–efficient of variation.
3. Correlation.

UNIT –IV

1. Least square fit linear trend, Non–linear trend.

$Y = ax^b$

$Y = ab^x$

$Y = ae^x$

Polynomial fit: $Y = a+bx+cx^2$

Books Recommended:

1. V. Rajaraman: Computer Oriented Numerical Methods, Prentice Hall of India Private Ltd., New Delhi.

2. B.S. Grewal, Numerical Methods for Engineering, Sultan Chand Publication.

Bachelor of Computer Applications (Semester – II)
(Session 2019-20)
Practical–I(Advanced C++ Programming)
COURSE CODE :BCAP–2116

Max. Marks: 75
Theory: 60
CA: 15
Time: 3 Hrs   Pass % = 35%

Implementation of C++ programming.

Bachelor of Computer Applications (Semester – II)
(Session 2019-20)
DRUG ABUSE: PROBLEM, MANAGEMENT AND PREVENTION
(COMPULSORY PAPER)
COURSE CODE :AECD–2161

Course Outcomes:

CO 1. This information can include factual data about what substance abuse is; warning signs of addiction ; information about how alcohol and specific drugs affect the mind and body;

CO 2. How to be supportive during the detoxification and rehabilitation process.

CO 3. Main focus of substance abuse education is teaching individuals about drug and alcohol abuse and how to avoid, stop, or get help for substance use disorders.

CO 4. Substance abuse education is important for students alike; there are many misconceptions about commonly used legal and illegal substances, such as alcohol and marijuana.

Bachelor of Computer Applications (Semester – II)
(Session 2019-20)
DRUG ABUSE: PROBLEM, MANAGEMENT AND PREVENTION
(COMPULSORY PAPER)
Problem of Drug Abuse
COURSE CODE :AECD–2161

Time: 3 Hrs   **Max. Marks: 50**
                                                                                  Theory: 40
                                                                                       CA: 10

Instructions for the Paper Setter

Eight questions of equal marks are to be set, two in each of the four Sections (A-D). Questions of Sections A-D should be set from Units I-IV of the syllabus respectively. 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.

UNIT-I

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

UNIT-II

School: Counselling, 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.

References:

1. 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.
4. Kapoor. T. (1985) *Drug epidemic among Indian Youth*, New Delhi: Mittal Pub.

5. Modi, Ishwar and Modi, Shalini (1997) *Drugs: Addiction and Prevention*, Jaipur: Rawat Publication.
6. National Household Survey of Alcohol and Drug abuse. (2003) New Delhi, Clinical Epidemiological Unit, All India Institute of Medical Sciences, 2004.
7. Sain, Bhim 1991, *Drug Addiction Alcoholism,* Smoking obscenity New Delhi: Mittal Publications.
8. Sandhu, Ranvinder Singh, 2009, *Drug Addiction in Punjab*: A Sociological Study. Amritsar: Guru Nanak Dev University.
9. Singh, Chandra Paul 2000. *Alcohol and Dependence among Industrial Workers*: Delhi: Shipra.
10. Sussman, S and Ames, S.L. (2008). *Drug Abuse: Concepts, Prevention and Cessation,* Cambridge University Press.

(Session 2019-20)
COMPUTER ARCHITECTURE
COURSE CODE: BCAL–3111

Course Outcomes:

After passing course the student will be able to:

CO1: Understand register and its micro-operations, computer instructions and basic design of computer.

CO2: Gain knowledge of various instruction formats and addressing modes.

CO3: Have understanding of memory organization and design.

CO4: Have understanding of I/O organization, Pipeline and vector processing.

Bachelor of Computer Applications (Semester – III)
(Session 2019-20)
COMPUTER ARCHITECTURE
COURSE CODE: BCAL–3111

Max. Marks: 75
Theory: 60
CA: 15

Time: 3 Hrs   Pass % = 35%

Instructions for Paper Setter -

Eight questions of equal marks are to set, two in each of the four sections (A-D). Questions of Sections A-D should be set from Units I-IV of the syllabus respectively. Questions may be divided 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.

UNIT-I

Information Representation: Register Transfer, Various Registers, Implementing Common Bus Using Multiplexers: Logical; Arithmetic & Shift Micro-operations.

Basic Computer Design Instruction Codes, Interfacing various Registers, Computer Instructions, Timing Signals, Instruction Cycle, Design of a Basic Computer.

UNIT-II

CPU Design Stack Organized CPU, Instruction Formats, Addressing Modes, Program Control, Hardwired & Microprogrammed (Wilhe's Design) Control Unit.

UNIT-III

Memory Organization Memory Hierarchy, Designs & Concepts of Main Memory, Auxiliary Memory, Associative Memory, Cache and Virtual Memory.

UNIT-IV

I/O Organization I/O Interface, Modes of Transfer, Program Interrupt, DMA & I/O Processor.

Pipeline & Vector Processing Parallel Processing Pipelining, Parallel & Distributed Computers, SISD, SIMD & MISD, MIMD Machines, Vector Processing.

References:
1. *Computer System Architecture: M.M. Mano (PHI)*
2. *Computer Architecture: J.P. Hayes.*
3. *Computer Architecture: Patterson & Hemessy.*

(Session 2019-20)
DATABASE MANAGEMENT SYSTEM
COURSE CODE: BCAL–3112

Course Outcomes:
After passing course the student will be able to:

CO1: Understand data, database and database models.

CO2: Gain knowledge of normalization and transaction control.

CO3: Gain knowledge of core database language-SQL.

CO4: Have a basic understanding of Big-data and NoSQL.

(Session 2019-20)
DATABASE MANAGEMENT SYSTEM
COURSE CODE: BCAL–3112

Max. Marks: 75
Theory: 60
CA: 15
Time: 3 Hrs   Pass % = 35%

Instructions for Paper Setter -

Eight questions of equal marks are to set, two in each of the four sections (A-D). Questions of Sections A-D should be set from Units I-IV of the syllabus respectively. Questions may be divided 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.

UNIT-I

Introduction to Data, Field, Record, File, Database, Database management system. Structure of database system, Advantages and Disadvantages, levels of database system, Relational model, Hierarchical model, Network model, comparison of models, E-R diagram, different keys used in a relational system, DBA, responsibilities of DBA.

UNIT-II

Codd's Rules, Relational Algebra, Relational Calculus - Domain and Tuple relational calculus, Query Processing and Optimization.

UNIT-III

Introduction to normalization – need and advantages of normalization, INF, 2NF, 3NF, BCNF, 4NF and 5NF, Introduction to transaction management – ACID Properties, concurrency control and its management, protection, security, recovery of database.

UNIT-IV

SQL: Introduction to SQL–DDL, DML, DCL, Join methods & sub query, Union Intersection, Minus, Built in Functions, Views, Security amongst users, sequences, Indexing,

Introduction to PL/SQL: Cursors – Implicit and Explicit, Procedures, Functions, Packages, Database Triggers.

Big Data: Introduction to Big Data and Analytics, Introduction to NoSQL.

Books and References:

1. *Introduction to Database System by C.J. Date.*
2. *Database Systems 4th Edition Thomas M Connolly Carolyn E Begg*
3. *Database Management System by B.C. Desai.*
4. *Database Concept by Korth.*
5. *Simplified Approach to DBMS– Kalyani Publishers*
6. *Oracle – Developer – 2000 by Ivan Bayross.*
7. *Database System Concepts & Oracle (SQL/PLSQ) – AP Publishers.*
8. *https://www.mongodb.com/nosql-explained*
9. *Introduction to NoSQL (Ebook), NoSQL Seminar 2012 @ TUT, Arto Salminen*

Bachelor of Computer Applications (Semester – III)
(Session 2019-20)
COMPUTATIONAL PROBLEM SOLVING USING PYTHON
COURSE CODE: BCAL–3113

Course Outcomes:

After passing course the student will be able to:

CO1: Understand formulation of algorithms and programs for problem solving.

CO2: Gain understanding of various programming constructs like data types, operators, string processing and control structures.

CO3: Have knowledge of object oriented programming paradigm.

CO4: Have understanding of file handling, exception handling and SQLite database connectivity in python.

Bachelor of Computer Applications (Semester – III)
(Session 2019-20)
COMPUTATIONAL PROBLEM SOLVING USING PYTHON
COURSE CODE: BCAL–3113

Max. Marks: 75
Theory: 60
CA: 15
Time: 3 Hrs   Pass % = 35%

Instructions for Paper Setter -

Eight questions of equal marks are to set, two in each of the four sections (A-D). Questions of Sections A-D should be set from Units I-IV of the syllabus respectively. Questions may be divided 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

UNIT-I

Introduction to Python: Process of Computational Problem Solving, Python Programming Language

Data and Expressions: Literals, Variables and Identifiers, Operators, Expressions, Statements and Data Types

Control Structures: Boolean Expressions (Conditions), Logical Operators, Selection Control, Nested conditions, Debugging

UNIT-II

Lists: List Structures, Lists (Sequences) in Python, Iterating Over Lists (Sequences) in Python

Dictionaries: Dictionaries and Files, Looping and dictionaries, Advanced text parsing

Iteration: While statement, Definite loops using For, Loop Patterns, Recursive Functions, Recursive Problem Solving, Iteration vs. Recursion

UNIT-III

Functions: Fundamental Concepts, Program Routines, Flow of Execution, Parameters & Arguments

Files: Opening Files, Using Text Files, String Processing, Exception Handling

UNIT-IV

Objects and Their Use: Introduction to Object Oriented Programming

Modular Design: Modules, Top-Down Design, Python Modules

Using Databases and SQL: Database Concepts, SQLite Manager Firefox Add-on, SQL basics summary, basic Data Modeling, Programming with multiple tables.

Reference Books:
1. Python for Informatics, Charles Severance, version 0.0.7
2. Introduction to Computer Science Using Python: A Computational Problem-Solving Focus, Charles Dierbach, Wiley Publications, 2012, ISBN : 978-0-470-91204-1
3. Introduction To Computation And Programming Using Python, GUTTAG JOHN V, PHI, 2014, ISBN-13: 978-8120348660
4. Introduction to Computating & Problem Solving Through Python, Jeeva Jose and Sojan P.Lal, Khanna Publishers, 2015, ISBN-13: 978-9382609810
5. Introduction to Computing and Programming in Python, Mark J. Guzdial, Pearson Education, 2015, ISBN-13: 978-9332556591
6. Fundamentals of Python by Kenneth Lambert, Course Technology, Cengage Learning, 2015
7. Learning Python by Mark Lutz, 5th Edition, O'Reilly Media, 2013

Bachelor of Computer Applications (Semester – III)
(Session 2019-20)
PRACTICAL LAB - PYTHON
COURSE CODE: BCAP–3114

Max. Marks: 50
Practical: 40
CA: 10

Time: 3 Hrs   Pass % = 35%

Lab Based on Python Programming

Bachelor of Computer Applications (Semester – III)
(Session 2019-20)
PRACTICAL LAB - ORACLE
COURSE CODE: BCAP–3115

Max. Marks: 25
Practical: 20
CA: 5
Time: 3 Hrs   Pass % = 35%

Lab Based on SQL and PL/SQL

(Session 2019-20)
DATA STRUCTURE
COURSE CODE: BCAL–4111

Course Outcomes:

After passing course the student will be able to:

CO1: Get familiarize with basic data structures.

CO2: Analyze algorithms to determine their efficiency.

CO3: Handle operations on various data structures.

CO4: Choose appropriate data structures according to real world problems.

Bachelor of Computer Applications (Semester – IV)
(Session 2019-20)
DATA STRUCTURE
COURSE CODE: BCAL–4111

Max. Marks: 75
Theory: 60
CA: 15

Time: 3 Hrs   Pass % = 35%

Instructions for Paper Setter -

Eight questions of equal marks are to set, two in each of the four sections (A-D). Questions of Sections A-D should be set from Units I-IV of the syllabus respectively. Questions may be divided 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

UNIT-I

Basic Data Structure: Introduction to elementary Data Organization, Common Operation on Data Structures, Algorithm Complexity, Big O Notation, Time – Space tradeoff between Algorithms.

Arrays: Array Defined, Representing Arrays in Memory, Various Operations on Linear Arrays, Multidimensional Arrays.

UNIT-II

Sorting and Searching: Sorting Algorithms, Bubble Sort, Insertion Sort, Selection Sort, Merge Sort, Searching Algorithms, Linear Search and Binary Search.

Hashing: Hash Functions, Division Method, Mid-Square Method, Folding Method.

Linked Lists: Types of Linked Lists, Representing Linked Lists in Memory, Advantages of using Linked Lists over Arrays, Various Operations on Linked Lists.

UNIT-III

Stacks: Description of STACK structure, Implementation of Stack using Arrays and Linked Lists, Applications of Stacks – Converting Arithmetic expression from infix notation to polish and their subsequent evaluation, Quicksort Technique to sort an array.

Queues: Description of queue structure, Implementation of queue using arrays and linked lists, Description of priorities of queues, Dequeues.

UNIT-IV

Trees: Description of Tree Structure and its Terminology, Binary Trees and Binary Search Trees and their representation in Memory, Heapsort.

Graphs: Description of Graph Structure, Implement Graphs in Memory using Adjacency Matrix, Path Matrix, graph traversal techniques - DFS, BFS.

Text/References:

1. Data Structure – Seymour Lipschutz, Schaum Outline Series.

2. File Structure & Data Structures by E. Loomis.

3. Data Structures by Trabley & Soreuson.

4. Tanenbaum, Data Structure using C.

(Session 2019-20)
INFORMATION SYSTEMS
COURSE CODE: BCAL–4112

Course Outcomes:

After passing this course student will be able to:

CO1: Know how information impacts the working and the decision making of the firm.

CO2: Understand about the basic methods of capturing and accessing information including online access.

CO3: Get awareness about various types of Information Systems - TPS, MIS, OAS and DSS.

CO4: Have the working knowledge of concepts and terminologies related to Functional Information System.

Bachelor of Computer Applications (Semester – IV)
(Session 2019-20)
INFORMATION SYSTEMS
COURSE CODE: BCAL–4112

Max. Marks: 75
Theory: 60
CA: 15
Time: 3 Hrs   **Pass % = 35%**

Instructions for Paper Setter -

Eight questions of equal marks are to set, two in each of the four sections (A-D). Questions of Sections A-D should be set from Units I-IV of the syllabus respectively. Questions may be divided 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

UNIT - I

Basic Terminology: Systems, Data, Information, Knowledge, Database and Database Management System.

Capturing of Information, sources of information, online access and capture.

UNIT - II

Types of systems, Introduction to Information system and its types.

Technologies for Information System: Latest trends in Hardware and Software.

Development life cycle of Information system.

UNIT - III

Types of Decisions: Structured, Unstructured and Semi Structured, Decision Support System (DSS), Transaction processing systems (TPS), office Automation systems (OAS).

UNIT - IV

Management Information System (MIS) and Expert System.

Case studies of the Information System: Accounting Information systems, Inventory control systems & Marketing systems.

References:

1. *"Information Systems" by Mudride & Ross.*
2. *"Business Information Systems", Muneesh Kumar.*
3. *"Information Systems for Managers", Ashok Arora and A.K. Shaya Bhatia*

(Session 2019-20)
INTERNET APPLICATIONS
COURSE CODE: BCAL-4113

Course Outcomes:

After passing course the student will be able to:

CO1: Understand Internet basics and it's working.

CO2: Gain knowledge of email service on different mail servers.

CO3: Understand different Internet protocols and search engines.

CO4: Have knowledge of basic web designing using markup languages.

(Session 2019-20)
INTERNET APPLICATIONS
COURSE CODE: BCAL-4113

Max. Marks: 75
Theory: 60
CA: 15

Time: 3 Hrs   Pass % = 35%

Instructions for Paper Setter -

Eight questions of equal marks are to set, two in each of the four sections (A-D). Questions of Sections A-D should be set from Units I-IV of the syllabus respectively. Questions may be divided 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

UNIT-I

Introduction: About Internet and its working, Business use of Internet, services offered by Internet, evaluation of internet, internet service provider (ISP), windows environment for dial up networking (connecting to internet), audio on Internet, Internet addressing (DNS) and IP addresses).

E–Mail Basics: Introduction, Advantage and disadvantage, structure of an e–mail message, working of e–mail (sending and receiving messages), managing e–mail (creating new folder, deleting messages, forwarding messages, filtering messages).

UNIT-II

Internet Protocol: Introduction, file transfer protocol (FTP), Gopher, Telnet, other protocols like HTTP and TCP/IP.

WWW: Introduction, working of WWW, Web browsing (opening, viewing, saving and printing a web page and bookmark).

UNIT-III

Web Designing: HTML – Elements, Attributes, Formatting, Paragraphs, Links, Lists, Tables, Images, Frames, Forms.

CSS – Types, Syntax, Colors, Background, Box model, Fonts, Alignment, CSS Links.

Javascript – Syntax, Operators, Data-Types, Function, Array.

UNIT-IV

Search Engine: About search engine, component of search engine, working of search engine, difference between search engine and web directory.

Intranet and Extranet: Introduction, application of intranet, business value of intranet, working of intranet, role of extranet, working of extranet, difference between intranet and extranet.

References:

1. "Understanding The Internet", Kieth Sutherland, Butterworth-Heinemann; 1st Edition (October 31, 2000).
2. "Internet Technologies", S. K. Bansal, APH Publishing Corporation (April 1, 2002).
3. "Data Communications and Networking", Behrouz A. Forouzan, 3rd Edition.

(Session 2019-20)
SYSTEM SOFTWARE
COURSE CODE: BCAL-4114

Course Outcomes:

After passing course the student will be able to:

CO1: Understand the basics of software system and its components.

CO2: Gain knowledge of translators like assemblers and compilers.

CO3: Understand the functionalities of linker and loader.

Bachelor of Computer Applications (Semester – IV)
(Session 2019-20)
SYSTEM SOFTWARE
COURSE CODE: BCAL-4114

Max. Marks: 75
Theory: 60
CA: 15
Time: 3 Hrs   Pass % = 35%

Instructions for Paper Setter -

Eight questions of equal marks are to set, two in each of the four sections (A-D). Questions of Sections A-D should be set from Units I-IV of the syllabus respectively. Questions may be divided 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

UNIT-I

Introduction to System Software: Introduction to System Software and its components, Translators, loaders, interpreters, compiler, assemblers

UNIT-II

Assemblers: Overview of assembly process, design of one pass and two assemblers

Macroprocessors: Macro definition and expansion, concatenation of macro parameters, generations of unique labels, conditional macro expansion, Recursive macro expansion

UNIT-III

Compilers: Phases of Compilation Process, Lexical Analysis, Parsing, Storage Management Optimization, Incremental Compilers, Cross Compilers.

UNIT-IV

Loaders and Linkage editors: Basic loader functions. Relocation, program linking, linkage, editors, dynamic linking, Bootstrap loaders

References:
1. Leland L. Beck: System Software, An Introduction to System Programming, Addison Wesley.
2. D.M. Dhamdhere: Introduction to System Software, Tata McGraw Hill.
3. D.M. Dhamdhere: System Software and Operating System, Tata McGraw Hill, 1992.
4. Madrich, Stuarte: Operating Systems, McGraw Hill, 1974.

5. Stern Nancy Assembler Language Programming for IBM and IBM Compatible Computers, John Wiley, 1991

Bachelor of Computer Applications (Semester – IV)
(Session 2019-20)
LAB – DATA STRUCTURE
COURSE CODE: BCAP–4115

Max. Marks: 50
Theory: 40
CA: 10
Time: 3 Hrs   Pass % = 35%

Lab based on Data Structure using C / C ++

Bachelor of Computer Applications (Semester – IV)
(Session 2019-20)
LAB – WEB DESIGNING
COURSE CODE: BCAP–4116

Max. Marks: 50
Theory: 40
CA: 10
Time: 3 Hrs   Pass % = 35%

Lab Based on Web Designing and use of Internet