FACULTY OF COMPUTER SCIENCE & IT

SYLLABUS

of

Bachelor of Science (Information Technology)

(Semester I - IV)

(Under Continuous Evaluation System)

(12+3 System of Education)

Session: 2019-20

The Heritage Institution
KANYA MAHA VIDYALAYA JALANDHAR
(Autonomous)

Program Specific Outcomes

Bachelor of Science (Information Technology)
(Session 2019-20)

PSO1: Demonstrate proficiency in the field of Programming, Web development and IT enabled services.

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

PS03: Achieve leadership role and can play different roles as team player in multiple disciplines.

Kanya Maha Vidyalaya, Jalandhar (Autonomous)

SCHEME AND CURRICULUM OF EXAMINATIONS OF THREE YEAR DEGREE PROGRAMME

Bachelor of Science (Information Technology)

Session 2019-20

	B.Sc. (IT) Semester – I						
Course Code	**Course Name**	**Course Type**	**Marks**				**Examination Time (in Hours)**
			Total	**Ext.**		**CA**	
				L	**P**		
BITL-1421 / BITL-1031/ BITL-1431	Punjabi (Compulsory) / [1]Basic Punjabi/ [2]Punjab History and Culture	C	50	40	-	10	3
BITL-1102	Communication Skills in English	C	50	40	-	10	3
BITL-1113	Introduction to Programming – C	C	75	60	-	15	3
BITL-1114	Fundamentals of Computers	C	75	60	-	15	3
BITL-1335	Applied & Discrete Mathematics	C	75	60	-	15	3
BITP-1116	Practical– PC Computing & C Language–I	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 Science (Information Technology)
Session 2019-20

B.Sc. (IT) Semester - II							
Course Code	**Course Name**	**Course Type**	**Marks**				**Examination Time (in Hours)**
			Total	**Ext.**		**CA**	
				L	**P**		
BITL-2421 / BITL-2031/ BITL-2431	Punjabi (Compulsory) / [1]Basic Punjabi/ [2]Punjab History and Culture (C 321 to 1000 A.D.)	C	50	40	-	10	3
BITM-2102	Communication Skills in English	C	50	25	15	10	3+3
BITL-2113	Introduction to Programming – C ++	C	75	60	-	15	3
BITL-2114	Principles of Digital Electronics	C	75	60	-	15	3
BITL-2115	Numerical Methods & Statistical Techniques	C	75	60	-	15	3
BITP-2116	Practical – C++ Language	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				

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 Science (Information Technology)
Session 2019-20

Course Code	Course Name	Course Type	Total	Ext. L	Ext. P	CA	Examination Time (in Hours)
B.Sc. (IT) Semester - III							
			Marks				
BITL-3111	Introduction to Python	C	75	60	-	15	3
BITL-3112	Data Structure	C	75	60	-	15	3
BITL-3113	System Analysis & Design	C	75	60	-	15	3
BITP-3114	Programming Lab – I (Python Programming Language)	C	50	-	40	10	3
BITP-3115	Programming Lab – II (Data Structure)	C	25	-	20	05	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 Science (Information Technology)

Session 2019-20

Course Code	Course Name	Course Type	Marks				Examination Time (in Hours)
			Total	Ext.		CA	
				L	P		
BITL-4111	Database Management System	C	75	60	-	15	3
BITL-4112	Internet Applications	C	75	60	-	15	3
BITL-4113	JAVA Programming Language	C	75	60	-	15	3
BITL-4114	E-Business	C	75	60	-	15	3
BITP-4115	Programming Lab – I (Oracle)	C	50	-	40	10	3
BITP-4116	Programming Lab – II (HTML & JAVA)	C	50	-	40	10	3
SECS - 4522	*Social Outreach	AC	25	-	25	-	1
	Total		400				

B.Sc. (IT) Semester - IV

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: BITL–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 ਮਨਰੋਥ ਵਿਦਿਆਰਥੀਆਂ ਦੀ ਬੁੱਧੀ ਨੂੰ ਤੀਖਣ ਕਰਦਿਆਂ ਉਨਾਂ ਦੀ ਲਿਖਣ ਪ੍ਰਤਿਭਾ ਨੂੰ ਉਜਾਗਰ ਕਰਨਾ ਹੈ।

> ਧੁਨੀ ਵਿਉਂਤ ਪੜ੍ਹਨ ਨਾਲ ਵਿਦਿਆਰਥੀ ਧੁਨੀਆਂ 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।

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

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 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) ਪੈਰਾ ਰਚਨਾ

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

ਸੈਕਸ਼ਨ-ਡੀ

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

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

➢ 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।

(Session 2019-20)
BASIC PUNJABI
COURSE CODE: BITL–1031

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 ਮਾਤ੍ਰਵਾਂ (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

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

08 ਅੰਕ

(Session 2019-20)
PUNJAB HISTORY & CULTURE
COURSE CODE :BITL–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 Science (Information Technology) Semester- I
(Session 2019-20)
PUNJAB HISTORY & CULTURE (From Earliest Times to C 320)
(Special Paper in lieu of Punjabi compulsory)

COURSE CODE :BITL–1431

Time: 3 Hours   Max. Marks: 50
                                                                 Theory: 40
                                                                 CA: 10

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 Science (Information Technology) Semester- I
(Session 2019-20)
COMMUNICATION SKILL IN ENGLISH
COURSE CODE: BITL–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 Science (Information Technology) Semester- I
(Session 2019-20)
COMMUNICATION SKILL IN ENGLISH
COURSE CODE: BITL–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.

$$(8 \times 5 = 40)$$

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.

(Session 2019-20)
INTRODUCTION TO PROGRAMMING - C
COURSE CODE: BITL–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 Science (Information Technology) Semester- I
(Session 2019-20)
INTRODUCTION TO PROGRAMMING - C
COURSE CODE: BITL–1113

Max. Marks: 75

Time: 3 Hrs   **Theory: 60**
CA:15
Pass Percentage: 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

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 ANSI C".
2. Scaum Outline Series: "Programming in C".
3. Dennis & Ritchie: "Programming in C".
4. Stephen G. Kochar: "C Programming".

FUNDAMENTALS OF COMPUTERS
COURSE CODE: BITL–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.

(Session 2019-20)
FUNDAMENTALS OF COMPUTERS
COURSE CODE: BITL–1114

Max. Marks: 75

Time: 3 Hrs
Theory: 60
CA:15
Pass Percentage: 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

1. Introduction to computer:

Computer System Characteristics, Hardware - CPU, Memory, Input, Output & Storage devices, Organization of Secondary Storage Media**,** Software - System & Application, Types of processing Batch and On-line.

UNIT-II

2. Operating System Concepts:

Role of an Operating System, Types of operating systems, Booting procedure and its types, Fundamentals and typical instructions of Windows & Non-Windows based Operating Systems.

UNIT-III

3. MS Word (Word for Windows):

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. Headers and Footers, Mail merge, macros, tables.

UNIT-IV

4. MS – PowerPoint:

Introduction to MS Power Point, Power Point Elements, Exploring Power Point Menu, Working with Dialog Boxes, Saving Presentation, Printing Slides, Slide View, Slide Sorter view, notes view, outline view, Formatting and enhancing text formatting.

Text Books:

1. R.K. Taxali : Introduction to Software Packages, Galgotia Publicaions.

2. MS–Office 2003, Compiled by SYBIX.

3. MS–Office 2003, BPB Publications.

4. Introduction to Computer, P.K. Sinha.

(Session 2019-20)
COURSE CODE: BITL–1335
APPLIED & DISCRETE MATHEMATICS

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 Science (Information Technology) Semester- I
(Session 2019-20)
APPLIED & DISCRETE MATHEMATICS
COURSE CODE: BITL–1335

Max. Marks: 75

Time: 3 Hrs   **Theory: 60**
                                                                                                      CA:15
                                                                                  Pass Percentage: 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.

Bachelor of Science (Information Technology) Semester- I
(Session 2019-20)
PC COMPUTING AND C LANGUAGE-I

COURSE CODE: BITP–1116

Max. Marks: 75

Time: 3 Hrs   **Practical: 60**
CA:15
Pass Percentage: 35%

Practical – C Language Part I & PC Computing

Bachelor of Science (Information Technology) Semester- I
(Session 2019-20)
DATA PREPROCESSING AND DATA MINING
COURSE CODE: BITL–1117

Max. Marks: 75

Time: 3 Hrs   **Theory: 60**
                                                                              CA:15
                                                                    Pass Percentage: 35%

Instructions for Paper Setter -

Eight questions of equal marks (12 marks each) 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
Data Processing: Basic Terminology of Data, Information and Knowledge.
Preprocessing the Data, Data cleaning, Data transformation, Data reduction.
Statistical description of data: Mean, Median and Mode.

UNIT II

Measures of Dispersion: Range, Quartile Deviation, Mean Deviation, Standard Deviation
Data Mining: Introduction, need, Applications, Process and techniques.
Data mining model
UNIT III

Excel Basics: Introduction, Basics of Cell, Modifying columns, rows and cells in excel, cells formatting, create a simple formula in excel, worksheet basics, Charts, printing an excel sheet.

UNIT IV

Creating Complex Formulas in Excel, Working with Basic Functions - to find values for a range of cells

Data analysis tools: Analyze, Detect, Fill from, Forecast, Scenario tool
References:
1. J. Han , M. Kamber and J. Pei , Data Mining: Concepts and Techniques , 3rd. Edition, Morgan Kaufmann Publishers.
2. Handbook of Data Mining by Nong Ye
3. Fundamentals of Numerical Methods and Statistical Techniques by Anshuman Sharma
4. Excel 2010 Bible by John Walkenbach

Bachelor of Science (Information Technology) Semester- I
(Session 2019-20)
DRUG ABUSE: PROBLEM, MANAGEMENT AND PREVENTION
(COMPULSORY PAPER)

Problem of Drug Abuse

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, Behavioural and Cognitive therapy.
   Social Management: Family, Group therapy and Environmental Intervention.

References:

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 ਪੜ੍ਹਣ 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 ਮਨਰੋਥ 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 Science (Information Technology) Semester- II
(Session 2019-20)
PUNJABI (COMPULSORY)
COURSE CODE: BITL–2421

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 (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 ਪ੍ਰਕਾਸ਼ਨ, ਲੁਧਿਆਣਾ। (ਲੇਖ 7 ਤੋਂ 12)(ਸਾਰ, ਲਿਖਣ ਸ਼ੈਲੀ)   08 ਅੰਕ

ਸੈਕਸ਼ਨ-ਸੀ

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

(ਅ) ਸ਼ਬਦ ਸ੍ਰੇਣੀਆਂ   08 ਅੰਕ

ਸੈਕਸ਼ਨ-ਡੀ

(ੳ) ਸੰਖੇਪ ਰਚਨਾ

(ਅ) ਮੁਹਾਵਰੇ ਅਤੇ ਅਖਾਣ   08 ਅੰਕ

(Session 2019-20)
BASIC PUNJABI
COURSE CODE: BITL–2031

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 ਸ੍ਰੇਣੀਆਂ 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।

➢ ਪੈਰਾ ਰਚਨਾ ਦਾ ਮਨੋਰਥ 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 ਦਫ਼ਤਰੀ 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।

(Session 2019-20)
BASIC PUNJABI
COURSE CODE: BITL–2031

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 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 ਉਪ੍ਪ੍ਰਸ਼ਨਾਂ ਵਿਚ ਕਰ ਸਕਦਾ ਹੈ।

ਪਾਠ ਕ੍ਰਮ

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

    ਪੈਰ੍ਹਾ ਰਚਨਾ

    ਸੰਖੇਪ ਰਚਨਾ   08 ਅੰਕ

ਸੈਕਸ਼ਨ ਡੀ

    ਚਿਠੀ ਪਤਰ (ਘਰੇਲੂ ਅਤੇ ਦਫ਼ਤਰੀ)

    ਅਖਾਣ ਅਤੇ ਮੁਹਾਵਰੇ   08 ਅੰਕ

(Session 2019-20)
PUNJAB HISTORY & CULTURE
COURSE CODE :BITL–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 Science (Information Technology) Semester- II
(Session 2019-20)
PUNJAB HISTORY & CULTURE (C 321 to 1000 A.D.)
(Special Paper in lieu of Punjabi compulsory)
COURSE CODE :BITL–2431

Time: 3 Hours   Max. Marks: 50
                                                                          Theory: 40
                                                                          CA: 10

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 Science (Information Technology) Semester- II
(Session 2019-20)
COMMUNICATION SKILLS IN ENGLISH
COURSE CODE: BITL–2102

Course Outcomes:

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

CO1: Enhancement of listening skills with the help of listening exercises based on conversation, news and TV reports.

CO2: Improvement of speaking skills enabling them to converse in a specific situation.

CO3: Acquisition of knowledge of phonetics which will help them in learning about correct pronunciation as well as effective speaking.

CO4: The capability to present themselves well in a job interview.

CO5: 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.

CO6: Speaking skills of the students enabling them to take active part in group discussion and present their own ideas.

CO7: The capability of narrating events and incidents in a logical sequence.

Bachelor of Science (Information Technology) Semester- II
(Session 2019-20)
COMMUNICATION SKILLS IN ENGLISH
COURSE CODE: BITL–2102

Time: 3 hours (Theory)   Max.   Marks:
50
    3 hours (Practical)   **Theory: 25**
                                      Practical: 15
                                          CA: 10

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.

(Session 2019-20)
INTRODUCTION TO PROGRAMMING - C++
COURSE CODE: BITL–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 Science (Information Technology) Semester- II
(Session 2019-20)
INTRODUCTION TO PROGRAMMING - C++
COURSE CODE: BITL–2113

Max. Marks: 75

Time: 3 Hrs   **Theorey:60**
CA:15
Pass Percentage: 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 Rebacca Wirfs - 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: BITL–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 Science (Information Technology) Semester- II
(Session 2019-20)
PRINCIPLES OF DIGITAL ELECTRONICS
COURSE CODE: BITL–2114

Max. Marks: 75

Time: 3 Hrs   **Theory: 60**
                                                                                                                            CA:15
                                                                                              Pass Percentage 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 Boolean expressions, K-Map

UNIT- III

Combinational Circuits: Adder, Subtracter, Multiplexer, Demultiplexer, Decoder, 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 Science (Information Technology) Semester- II
(Session 2019-20)
NUMERICAL METHODS & STATISTICAL TECHNIQUES
COURSE CODE: BITL–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 Science (Information Technology) Semester- II
(Session 2019-20)
NUMERICAL METHODS & STATISTICAL TECHNIQUES
COURSE CODE: BITL–2115

Max. Marks: 75

Time: 3 Hrs   **Theory :60**
CA:15
Pass Percentage 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,
4. Numerical Integration and different Trapezoidal Rule, Simpson's 3/8 Rule.

UNIT-II

1   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. Measure of Dispersion, Mean Deviation, Standard Deviation, Co–efficient of Variation.

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 Science (Information Technology) Semester- II
(Session 2019-20)
PRACTICAL – C++ LANGUAGE
COURSE CODE: BITP–2116

Max. Marks: 75

Time: 3 Hrs

Practical :60
CA:15
Pass Percentage 35%

Implementation of C++ programming.

Bachelor of Science (Information Technology) Semester- II
(Session 2019-20)
DRUG ABUSE: PROBLEM, MANAGEMENT AND PREVENTION
(COMPULSORY PAPER)
Problem of Drug Abuse

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 Science (Information Technology) 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. 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)
INTRODUCTION TO PYTHON
COURSE CODE: BITL–3111

Course Outcomes:

After passing course the student will be able to:

CO1: Understand the 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 paradigms.

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

(Session 2019-20)
INTRODUCTION TO PYTHON
COURSE CODE: BITL–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

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.

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

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

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 basic summary, Basic Data modeling, Programming with multiple tables.

References:
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

(Session 2019-20)

DATA STRUCTURE

COURSE CODE: BITL–3112

Course Outcomes:

After passing course the student will be able to:

CO1: Get familiarized 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 Science (Information Technology) Semester – III

(Session 2019-20)

DATA STRUCTURE

COURSE CODE: BITL–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

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, MidSquare 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.

References:
1. Seymour Lipschutz, Theory and Problems of Data Structures, Schaum's Outline Series, McGraw Hill Company.
2. Tanenbaum, Data Structure using C.

(Session 2019-20)

SYSTEM ANALAYSIS & DESIGN

COURSE CODE: BITL–3113

Course Outcomes:

After passing course the student will be able to:

CO1: Gather data to analyze and specify the requirements of a system.

CO2: Design database for storing data and user interface for data input and output,

CO3: Build modular and structured design of a system and in designing a model.

CO4: Identify the quality assurance and documentation tools.

(Session 2019-20)

SYSTEM ANALAYSIS & DESIGN

COURSE CODE: BITL–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

System Planning and Analysis: Introduction to systems development life cycle and role of different stages. Requirement analysis, Problem definition, Feasibility Study and its importance. Information Gathering Tools, Cost Benefit Analysis, Role and Responsibilities of System Analyst.

UNIT–II

System Design: Introduction to Architectural Design, User Interface Design, Data Design, Tools for Structured design and System design considerations.

UNIT–III

System Testing: Introduction to testing and its types, Types of Documentation and Documentation Tools.

UNIT–IV

System Implementation: Quality Assurance, Managing system implementation, Transition to new system.

System Maintenance: Concept of maintenance and its importance, types of maintenance.

References:

1. *"Elements of System Analysis" – Marvin Gore and John W. Stubbe, 2003.*
2. *"System Analysis and Design" – Thapliyal M.P., 2002.*
3. *"Modern Systems Analysis & Design" – Hoffer, George and Valacich , 2001.*
4. *"SSAD: System Software Analysis and Design" – Mehta Subhash and Bangia Ramesh, 1998.*
5. *"Understanding Dynamic System: Approaches to Modelling, Analysis and Design" – Dorny C. Nelson, 1993.*
6. *"System Analysis and Design" – Perry Edwards, 1993.*
7. *"Systems Analysis and Design" – Elias M. Awad, 1993.*
8. *"Analysis and Design of Information Systems" – James A. Senn, 1989.*

(Session 2019-20)

PROGRAMMING LAB – I (PYTHON PROGRAMMING LANGUAGE)

COURSE CODE: BITP–3114

Max. Marks: 50
Practical: 40
CA: 10

Time: 3 Hrs   Pass % = 35%

Lab – I: Lab based on Python, Programming Language

Bachelor of Science (Information Technology) Semester- III

(Session 2019-20)

PROGRAMMING LAB – II (DATA STRUCTURE)

COURSE CODE: BITP–3115

Max. Marks: 25
Practical: 20
CA: 05

Time: 3 Hrs   Pass % = 35%

Lab – II: Lab based on Data Structure

Bachelor of Science (Information Technology) Semester- IV

(Session 2019-20)

DATABASE MANAGEMENT SYSTEM

COURSE CODE: BITL–4111

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 knowledge of Big Data and NoSQL.

Bachelor of Science (Information Technology) Semester- IV

(Session 2019-20)

DATABASE MANAGEMENT SYSTEM

COURSE CODE: BITL–4111

Time: 3 Hrs

Max. Marks: 75
Practical: 60
CA: 15
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 and 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 & Explicit, Procedures, Functions & Packages Database Triggers.

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

References:

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

Bachelor of Science (Information Technology) Semester- IV

(Session 2019-20)

INTERNET APPLICATIONS

COURSE CODE: BITL–4112

Course Outcomes:

After passing course the student will be able to:

 CO1: Understand internet basics and its 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 language.

Bachelor of Science (Information Technology) Semester- IV

(Session 2019-20)

INTERNET APPLICATIONS

COURSE CODE: BITL–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

Introduction : About internet and its working, business use of internet, services effect 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 email message, working of e–mail (sending and receiving messages), managing email (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 and Forms.

CSS: Types, Syntax, Colors, Backgrounds, Box Model, Fonts, Alignment, CSS Links.

Javascript: Syntax, Operators, Function & Array.

UNIT-IV

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

Internet 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.*

Bachelor of Science (Information Technology) Semester- IV

(Session 2019-20)

JAVA PROGRAMMING LANGUAGE

COURSE CODE: BITL–4113

Course Outcomes:

After passing this course the student will be able to:

CO1: Understand the basic fundamentals of Java programming.

CO2: Gain knowledge of object oriented concepts to model real world problems.

CO3: Have knowledge of packages, multithreading and Exception handling.

CO4: Demonstrate the concept of file handling and Applets.

Bachelor of Science (Information Technology) Semester- IV

(Session 2019-20)

JAVA PROGRAMMING LANGUAGE

COURSE CODE: BITL–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   to   Java Programming: Features, Object Orientation Concepts, Java Virtual Machine, Data Types, Operators, Control Structures.

UNIT-II

Introduction to OOPS: Classes & Methods, Constructors, Inheritance & Polymorphism

UNIT-III

Packages & Interfaces, Multithreading in Java, Exception Handling.

UNIT-IV

I/O Stream Classes & File Handling

Applets: Applet basics, Applet Life Cycle, Applet Display, Repaint, Parameter Passing.

References:
1. "Java–The Complete Reference", Hurbert Schildt, Tata MacGraw Hill.
2. "Introduction to Java Programming", Y. Daniel Mliang, Pearsons Publications.
3. "Beginning Web Programming with HTML, XHTML, and CSS", Jon Duckett, John Wiley & Sons, 06 Aug. 2004.
4. "HTML & XHTML: The Complete Reference", Thomas A. Powell, McGraw-Hill.

(Session 2019-20)

E-BUSINESS

COURSE CODE: BITL–4114

Course Outcomes:

After passing this course student will:

CO1: Gain knowledge on basic terms of E-Commerce, its evolution, aims and benefits.

CO2: Learn about the steps to be followed for opening a new E-Commerce business, along with its H/W & S/W requirements.

CO3: Get knowledge on various issues involved in relation to secure electronic transactions and Laws for E-Commerce.

CO4: Know about BPR and Case Studies of E-Business related applications.

(Session 2019-20)

E-BUSINESS

COURSE CODE: BITL–4114

Time: 3 Hrs

Max. Marks: 75
Theory: 60
CA: 15
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

E – Commerce: Definition, Aims, Results, VAN's and internet as Promoters, Types of E – Commerce.

Steps to Start E – Commerce: H/W & S/W Requirements, steps involved in opening your own online business.

UNIT - II

EDI: EDI Vs Traditional Systems, components of EDI system, EDI implementation issues, EDI service providers in India. Paper documents versus Electronic documents.

Concerns for E – Commerce: Basic challenges to E – Commerce: Legal and regulatory issues. Laws for E – Commerce.

UNIT – III

NII: Technical issues, standards & Services, Introduction to GII, Issues that confront in relation to securing electronic transactions. Implementation of digital signatures. Authentication Mechanisms.

Re – Engineering for Change: Business process re – engineering (BPR), Methodology and Planning Methods for change.

UNIT – IV

Case Studies: To demonstrate usefulness of E – Commerce in various business areas like Banks, Reservations, E – Governance and Retailing. E-Commerce in India.

References:

1. E – Commerce – The Cutting Edge of Business, Kamlesh K. Bajaj and Debjani Nag.
2. Digital Commerce 2.0 and its Applications, Kapil Goyal Kalyani Publishers
3. Spectrum E - Commerce by Nadda and Negi Sharma Publishers

Bachelor of Science (Information Technology) Semester- IV

(Session 2019-20)

PROGRAMMING LAB – I (ORACLE)

COURSE CODE: BITP–4115

Max. Marks: 50
Practical: 40
CA: 10

Time: 3 Hrs   Pass % = 35%

Lab – I: Lab based on Oracle

Bachelor of Science (Information Technology) Semester- IV

(Session 2019-20)

PROGRAMMING LAB – II (HTML & JAVA)

COURSE CODE: BITP–4116

Max. Marks: 50
Practical: 40
CA: 10

Time: 3 Hrs   Pass % = 35%

Lab – II: Lab based on HTML & Java Programming