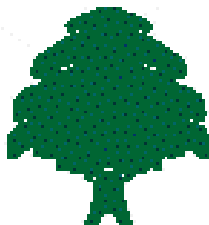


# POST GRADUATE GOVERNMENT COLLEGE FOR GIRLS

## SECTOR-11, CHANDIGARH

NAAC Accredited 'A' Grade with CGPA 3.52



COURAGE TO KNOW

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METRIC NO.1.3.2

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# **M.Sc.IT**

# **Internship Proofs**



PERFECT COMPUTER INSTITUTE

राष्ट्रीय सर्व शिक्षा अभियान (रजि)  
An ISO 9001:2008 CERTIFIED

Regd. BY HARYANA GOVT (GOVT. OF INDIA) (M) 9988575211

Ref No. PCI/01/1023

Date. 11/03/2022

**TO WHOM IT MAY CONCERN**

To

Prof. Pardeep Singh Walia Head of the Department,  
Govt. P.G. COLLEGE FOR GIRLS Sector 11, Chandigarh

Subject: **CONFIRMATION OF SIX MONTHS INDUSTRIAL TRAINING**

Dear Sir,

It is our pleasure to confirm you that **Ms. Priyanka Sharma Roll No. 2761/20** student of **M.Sc (I.T) 4th Semester** in your college with Ref. code: PGGCG-II/M.Sc.IT/2021- 22/11 will take training in our Institute as an **"Industrial Trainee Student"** for the period of Six months.

The management and the Faculty will view and monitor her performance continuously during the period of his training and help her to prepare project using Python as programming language.

We hope the same co-operation in future.

Thanks & Regards,

160-161 1st Floor, Old Ropar Road, Opp. Anil Studio, Manimajra, Chandigarh(M) 998857521  
B.O: #429, Harmilap Nagar, Phase-1, Baltana (pb), 01762-508611

**To Whomsoever It May Concern**

Subject: Confirmation of Six Months Industrial Training

Dear Sir,

It is our Pleasure to confirm you that **Ms. Jyoti Sharma** of PGGCG-11, Chandigarh, MSC (IT) branch bearing Reg.No.2759/20 have registered with us for the 6 MONTHS Training in **Python Data Science** from **TECHLIVE SOLUTION** commencing from **Feb 2022**

Thanking you and assuring you of our best efforts in imparting training to your student.



Regards,

Techlive Solutions

Hewlett Packard Enterprise Education



**To Whomsoever It May Concern**

Subject: Confirmation of Six Months Industrial Training

Dear Sir,

It is our Pleasure to confirm you that **Ms. Swati Dhawan** of PGGCG-11, Chandigarh, MSC (IT) branch bearing Reg.No.2758/20 have registered with us for the 6 MONTHS Training in **Python Data Science** from **TECHLIVE SOLUTION** commencing from **Feb 2022**

Thanking you and assuring you of our best efforts in imparting training to your student.

  
Regards,

Techlive Solutions

Hewlett Packard Enterprise Education



**To Whomsoever It May Concern**

Subject: Confirmation of Six Months Industrial Training

Dear Sir,

It is our Pleasure to confirm you that **Ms. Palak Thakur of PGGCG-11, Chandigarh, MSC (IT)** branch bearing Reg.No.2757/20 have registered with us for the 6 MONTHS Training in **Python Data Science** from **TECHLIVE SOLUTION** commencing from **Feb 2022**

Thanking you and assuring you of our best efforts in imparting training to your student.



Regards,

Techlive Solutions

Hewlett Packard Enterprise Education



**To Whomsoever It May Concern**

Subject: Confirmation of Six Months Industrial Training

Dear Sir,

It is our Pleasure to confirm you that **Ms. Diksha Kumari** of PGGCG-11, Chandigarh, MSC (IT) branch bearing Reg.No.2756/20 have registered with us for the 6 MONTHS Training in **Python Data Science** from **TECHLIVE SOLUTION** commencing from **Feb 2022**

Thanking you and assuring you of our best efforts in imparting training to your student.

  
Regards,

Techlive Solutions

Hewlett Packard Enterprise Education







ISO 9001  
CERTIFIED

Ref No: ExTech/6M/2022/9012

Date: 30/02/2023

To

The Director  
Training & Placement Officer,

PGCCE II  
CHANDIGARH

Subject: Confirmation (NOC) for 6 MONTHS Industrial Training in PYTHON

Dear Sir/Madam,

We feel pleasure to acquaint with our company **EXCELLENCE TECHNOLOGY**, An ISO Certified Company, as pioneer in the field of Software Development & Industrial Internship. Our Company involves in **Software Development, Web Designing, Industrial Training in Production and Manufacturing unit, On Site Training Corporate Training**, Consulting and Promoting outstanding products of various companies. We have substantial experience in Analyzing, Designing, Developing, Testing, Implementing and Supporting projects.

We **EXCELLENCE TECHNOLOGY** confirm training of Mr./Ms ALISHA  
University Roll No. 2755/20 of MSC - IT branch in our esteemed organization and as per rule we are provide the No Objection Certificate for 6 MONTHS Industrial Training in our premises. His/her training will be starting from Feb-2023.

Our endeavor will be to impart & enhance knowledge of the student.

Thanks & Regards

Mr. Deepak Kashyap  
Branch Manager  
9317788822



*Leader In Development*

C-133, 1st Floor, Ind. Area, Phase 8, Sector 72, Near PCL Chowk, Mohali  
93177-88822, 93562-55522  
E : info@excellencetechnology.in, W : www.excellencetechnology.in



**INTERNSHIP APPOINTMENT LETTER**

**Date: 02<sup>nd</sup> March 2022**

**Naina Soni**

**D/O Vijay Soni  
#2548, 2<sup>nd</sup> Floor, Sector 22 C,  
Chandigarh- 160022**

**Dear Ms. Naina,**

The **PURE SOFTECH** is pleased to appoint you on an Internship opportunity as an **Intern Web Developer**. You will report directly to the Technology Leadership Team. This position is located at Mohali.

You will be receiving Internship Certificate for this position on completion of the Internship Programme.

Your daily office schedule will be from Monday to Friday with Saturday and Sunday as weekly off. The commencement date of your Internship is **1<sup>st</sup> April 2022 to 30<sup>th</sup> Sept 2022**.

During your Internship, you will have access to the company's clients and confidential information. You agree that you will keep all this information and client information strictly confidential and will not share it with anyone outside the company under any circumstances. You will not use it for your own benefits and on completion of the Internship; you will return ID card, documents, equipment, and all property of the company.

Please indicate your acceptance of the Internship by signing this letter and returning it to HR department of the Company.

Congratulations and welcome to Pure Softech Team!

Best Wishes,

**Pure Softech**

**FOR PURE SOFTECH**



**Authorized Signatory**

**To Whomsoever It May Concern**

Subject: Confirmation of Six Months Industrial Training

Dear Sir,

It is our Pleasure to confirm you that **Ms. Bhumika** of P.G. Government College for Girls, Sector-11, Chandigarh, MSC (IT) branch bearing Reg.No.2753/20 have registered with us for the 6 MONTHS Training in **Java from TECHLIVE SOLUTION** commencing from **Feb 2022**

Thanking you and assuring you of our best efforts in imparting training to your student.



Regards,

Techlive Solutions

Hewlett Packard Enterprise Education

**To Whomsoever It May Concern**

Subject: Confirmation of Six Months Industrial Training

Dear Sir,

It is our Pleasure to confirm you that **Ms. Anchal Mohan of PGGCG-11, Chandigarh, MSC (IT)** branch bearing Reg.No.2752/20 have registered with us for the 6 MONTHS Training in **PHP Development** from **TECHLIVE SOLUTION** commencing from **Feb 2022**

Thanking you and assuring you of our best efforts in imparting training to your student.

  
Regards,

Techlive Solutions

Hewlett Packard Enterprise Education



**To Whomsoever It May Concern**

Subject: Confirmation of Six Months Industrial Training

Dear Sir,

It is our Pleasure to confirm you that **Ms. Sheetal Jamwal** of PGGCG-11, Chandigarh, MSC (IT) branch bearing Reg.No.2751/20 have registered with us for the 6 MONTHS Training in **PHP Development** from **TECHLIVE SOLUTION** commencing from **Feb 2022**

Thanking you and assuring you of our best efforts in imparting training to your student.

  
Regards,

Techlive Solutions

Hewlett Packard Enterprise Education



Date: 1 Jan 2022

To

The Director  
Training & Placement officer,

PGCCG, Sec-11  
Chandigarh

Subject: **Confirmation (NOC)** for 6 Months Industrial Training in Python

Dear Sir/Madam,

I would like to take this opportunity to introduce ourselves – **INFOWIZ A Software Solution** is a 9 years young organization which has won the **NATIONAL AWARD** for 4 consecutive years **2014, 2015 & 2016 & 2017** for **BEST Industrial Training** from Hon' able **GOVERNOR of Punjab & Haryana Sh. Kaptan Singh Solanki**. He is also the **Chancellor of PTU & Punjabi University**. **INFOWIZ** is a member of **Confederation of Indian Industry ( CII membership number – N4654P )** & also with an **ISO Certification** which has been working in the field of **CSE, IT, ECE, MECHANICAL, CIVIL & EE**. Our clients range from small, medium to large scale Business houses & individuals. We also provide the offshore companies of **US, UK, France, Ireland, Canada and Australia** with quality and timely **Web and SEO services**. It is an association which is functioning in the field of **iPhone & Android Application, Robotics, Embedded systems, VLSI-VHDL, Automation, Web Development (PHP & .NET), SEO, Digital Marketing Cloud Computing, JAVA, Web Designing, Networking, Automobile, AutoCAD, CATIA, Solid Works, PRO-E, CREO, REVIT, Staad-pro, SAS, SAP, 3DS-MAX & Primavera**.

We, **INFOWIZ A Software Solution (ISO 9001:2015 Certified)** confirm your training of **Mr/Ms. Diksha Bhandari S/O Sh. Jaswinder Bhandari University Roll No 2762/20** of CSE branch in our esteemed organization and as per rule we provide the **No Objection Certificate** for 6 Months Industrial Training. His/Her training will start from Jan, 2022

Our endeavor will be to impart & enhance knowledge of the student.

Thanks & Regards

Mr. Kamal Jot Kansal  
Director

**INFOWIZ A Software Solution**  
Sector 34-A, CHANDIGARH  
0172-4567888, 99885-00888, 99885-00888



*Here the future begins.....*



Authenticity Barcode

SCO 118-120, Basement,  
Sector - 34 A, **CHANDIGARH**  
Phone : 0172-4567888  
Mobile : 090234-00888  
Web : [www.infowiz.co.in](http://www.infowiz.co.in)  
Email : [info@infowiz.co.in](mailto:info@infowiz.co.in)

# **M.Sc. Botany**

## **Project Work**





POST GRADUATE GOVERNMENT COLLEGE FOR GIRLS  
SECTOR-11, CHANDIGARH

TELEPHONE 0172-2740614

Ref. No.

PGGCG/22/6382

DATE

27/5/2022

M.SC. BOTANY NUMBER OF STUDENTS UNDERTAKING PROJECT WORK/FIELD  
WORK/INTERNSHIPS (2021-22)

Sr.No.	List/Name of students Undertaking Project work	Title of the Project work	Place of Project work
1.	Tamanna	Modulation of salinity stress effects in Chick pea ( <i>Cicer arietinum</i> ) plant with foliar application of <i>Moringa oleifera</i> leaf extract (MLE)	Botany Department, PGGCG-11, Chandigarh
2.	Arshpreet	Modulation of salinity stress effects in Chick pea ( <i>Cicer arietinum</i> ) plant with foliar application of <i>Moringa oleifera</i> leaf extract (MLE)	Botany Department, PGGCG-11, Chandigarh
3.	Muskan	Modulation of salinity stress effects in Chick pea ( <i>Cicer arietinum</i> ) plant with foliar application of <i>Moringa oleifera</i> leaf extract (MLE)	Botany Department, PGGCG-11, Chandigarh
4.	Arshdeep	Blossoming trees of Chandigarh	Botany Department, PGGCG-11, Chandigarh
5.	Priya	Blossoming trees of Chandigarh	Botany Department, PGGCG-11, Chandigarh
6.	Jaspreet	Blossoming trees of Chandigarh	Botany Department, PGGCG-11, Chandigarh
7.	Stanzin	Blossoming trees of Chandigarh	Botany Department, PGGCG-11, Chandigarh
8.	Akshita	Formulation and evaluation of pure herbal hair dyes	Botany Department, PGGCG-11, Chandigarh
9.	Vedika	Formulation and evaluation of pure herbal hair dyes	Botany Department, PGGCG-11, Chandigarh
10.	Shivani	Formulation and evaluation of pure herbal hair dyes	Botany Department, PGGCG-11, Chandigarh
11.	Gurjeet	Formulation and evaluation of pure herbal hair dyes	Botany Department, PGGCG-11, Chandigarh

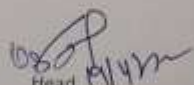
TELEFAX : 0172-2740614


www.gcg11.org

www.gcg11.ac.in

E-mail : principal\_gcg@yahoo.com

12.	Anupama	Algal pigments and their biotechnological applications	Botany Department, PGGCG-11, Chandigarh
13.	Palak	Algal pigments and their biotechnological applications	Botany Department, PGGCG-11, Chandigarh
14.	Natasha	Algal pigments and their biotechnological applications	Botany Department, PGGCG-11, Chandigarh
15.	Simran	Algal pigments and their biotechnological applications	Botany Department, PGGCG-11, Chandigarh
16.	Manpreet Kaur	Phytochemical analysis of Dillenia indica	Botany Department, PGGCG-11, Chandigarh
17.	Kimmi Mittal	Phytochemical analysis of Dillenia indica	Botany Department, PGGCG-11, Chandigarh
18.	Diksha	Phytochemical analysis of Dillenia indica	Botany Department, PGGCG-11, Chandigarh
19.	Minakshi	Phytochemical analysis of Dillenia indica	Botany Department, PGGCG-11, Chandigarh
20.	Muskan Gupta	Diversity of Wood-rotting fungi from four important locations of Northern Chandigarh	Botany Department, PGGCG-11, Chandigarh
21.	Rizvi/Dolkar	Diversity of Wood-rotting fungi from four important locations of Northern Chandigarh	Botany Department, PGGCG-11, Chandigarh
22.	Riya	Diversity of Wood-rotting fungi from four important locations of Northern Chandigarh	Botany Department, PGGCG-11, Chandigarh
23.	Monika Kam	Diversity of Wood-rotting fungi from four important locations of Northern Chandigarh	Botany Department, PGGCG-11, Chandigarh
24.	Tamanna	Medicinal Plants of PGGCG-11, Chandigarh	Botany Department, PGGCG-11, Chandigarh
25.	Gurmeet	Medicinal Plants of PGGCG-11, Chandigarh	Botany Department, PGGCG-11, Chandigarh
26.	Dhruvi	Medicinal Plants of PGGCG-11, Chandigarh	Botany Department, PGGCG-11, Chandigarh
27.	Anju Dehar	Medicinal Plants of PGGCG-11, Chandigarh	Botany Department, PGGCG-11, Chandigarh

  
 Head  
 Dept of BOTANY  
 PGGCG-11, Chandigarh

  
 PRINCIPAL  
 PGGCG-11, Chandigarh College for Girls  
 Sector 11, Chandigarh

**Project report**  
**On**  
**Modulation of salinity stress effects in Chick pea (*Cicer arietinum*) plants**  
**with foliar application of Moringa oleifera leaf extract ( MLE )**

**Submitted to**  
**Department of Botany**  
**Post Graduate Government College For Girls, Sector-11**  
**Panjab University**  
**Chandigarh**



**Session: 2020-2022**

**Submitted by:**  
**Arshpreet Kaur**  
**Tamanna Sharma**  
**Muskan**

POST GRADUATE GOVERNMENT COLLEGE FOR GIRLS  
SECTOR-11, CHANDIGARH



PROJECT REPORT  
ON  
"BLOSSOMING TREES OF CHANDIGARH"

(2021-2022)

Submitted to: Dr. Anurita Sharma  
Botany Department (PGGCG-11, CHANDIGARH)

Submitted by: Arshdeep Kaur (2563), Jaspreet Kaur(2561) Priya(2582)  
M.Sc. II (Botany)

A PROJECT ON  
**FORMULATION AND EVALUATION OF  
PURE HERBAL HAIR DYES**



A PROJECT SUBMITTED TO  
DEPARTMENT OF BOTANY  
POST GRADUATE GOVERNMENT COLLEGE FOR GIRLS-SECTOR  
11, CHANDIGARH  
Affiliated to  
PANJAB UNIVERSITY  
CHANDIGARH

**MASTER OF SCIENCE IN BOTANY**  
SESSION (2020-2022)

UNDER THE SUPERVISION OF  
**Dr. Madhumita Bhattacharjee**

SUBMITTED BY  
*Akshita Kumari, Gurjeet Kaur, Shivani Kumari and Vedika*



**A REVIEW  
ON  
ALGAL PIGMENTS AND THEIR BIOTECHNOLOGICAL  
APPLICATIONS**



**SUBMITTED TO:  
DEPARTMENT OF BOTANY  
POST GRADUATE GOVERNMENT COLLEGE FOR GIRLS,  
SECTOR 11,  
PANJAB UNIVERSITY, CHANDIGARH  
SESSION: 2020-2022**

*Under the Supervision of :*  
**DR HARSH MANCHANDA**

*Submitted By:*  
**SIMRAN  
ANUPAMA  
PALAK  
NATASHA BHARADWAJ**





A PROJECT ON  
PHYTOCHEMICAL ANALYSIS OF DILLENIA INDICA  
(ELEPHANT APPLE)



A PROJECT SUBMITTED TO PANJAB UNIVERSITY  
CHANDIGARH  
MASTERS OF SCIENCE IN BOTANY  
SESSION (2021-22)  
UNDER THE SUPERVISION OF  
DR. ANJU PEHWAL



SUBMITTED BY  
DIKSHA SAINI, MINAKSHI RANA , MANPREET KAUR, KIMMI MITTAL  
DEPARTMENT OF BOTANY PGGCG -11, CHANDIGARH

POST GRADUATE GOVERNMENT COLLEGE FOR GIRLS,  
SECTOR-11, CHANDIGARH



PROJECT  
ON  
DIVERSITY OF WOOD-ROTTING FUNGI FROM FOUR IMPORTANT  
LOCATIONS OF NORTHERN CHANDIGARH

SESSION (2021-2022)

UNDER THE SUPERVISION OF  
Dr. Amit Jakhal  
Department of Botany, PGGCG-11, Chandigarh

Submitted By  
Monika Karn, Muskan Gupta, Rigzin Dolkar, Riya Sethi  
M.Sc. II Botany

**A PROJECT ON  
MEDICINAL PLANTS OF PGGCG-11,  
CHANDIGARH**



**A PROJECT SUBMITTED TO PANJAB UNIVERSITY**

**CHANDIGARH**

**MASTER OF SCIENCE IN BOTANY**

**SESSION (2020-2022)**

**UNDER THE SUPERVISION OF**

**Dr. Shikha Sharma**

**SUBMITTED BY**

**Anju, Dhruvi, Gurmeet, Tamanna**

**DEPARTMENT OF BOTANY, SECTOR 11, CHANDIGARH**

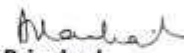
# **M.Sc. Physics**

## **Project Work**

**Office of the Principal, Post-Graduate Government College for Girls,  
Sector-11, Chandigarh.**

It is certified that following are the bonafide students of this college who will go for an industrial visit at PCL Mohali to be held on 25<sup>th</sup> Nov., 2021.

S.No.	Name	Roll No.	Class
1.	Sheetal (H)	2678	M.Sc.II
2.	Anjali (H)	2652	M.Sc.II
3.	Sophia (H)	2674	M.Sc.II
4.	Shikha (H)	2671	M.Sc.II
5.	Aarshdeep (H)	2659	M.Sc.II
6. *	Nidhi -	2651	M.Sc.II

  
Principal,  
PGGCG-11, Chd.

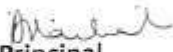
Nidhi (R.No. 2651) visited Luminous Power Technologies  
(Pvt. Ltd.) Gurgaon (Haryana) - on 25-11-21 due to being  
on family way.



**Office of the Principal, Post-Graduate Government College for Girls,  
Sector-11, Chandigarh.**

It is certified that following are the bonafide students of this college who will go for an industrial visit at PCL Mohali to be held on 25<sup>th</sup> Nov., 2021.

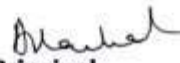
S.No.	Name	Roll No.	Class
1.	Rayman Goel (H)	2665	M.Sc.II
2.	Monika Sharma (H)	2661	M.Sc.II
3.	Ashima (H)	2653	M.Sc.II
4.	Jasmeen	2669	M.Sc.II
5.	Mahina Kaushik	2670	M.Sc.II
6.	Navee	2685	M.Sc.II

  
Principal,  
PGGCG-11, Chd.

**Office of the Principal, Post-Graduate Government College for Girls,  
Sector-11, Chandigarh.**

It is certified that following are the bonafide students of this college who will go for an industrial visit at Amber Enterprise, Rajpura to be held on 25<sup>th</sup> Nov., — 2021.


S.No.	Name	Roll No.	Class
1.	Navjot	2675	M.Sc.II
2.	Simran	2663	M.Sc.II
3.	Navneet	2664	M.Sc.II
4.	Mansi	2672	M.Sc.II

  
Principal,  
PGGCG-11, Chd.

**Office of the Principal, Post-Graduate Government College for Girls,  
Sector-11, Chandigarh.**

It is certified that following are the bonafide students of this college who will go for an industrial visit at Mahindra Swaraj Division, Panjab to be held on 1<sup>st</sup> Dec., 2021.


S.No.	Name	Roll No.	Class
1.	Rishika (H)	2681	M.Sc.II
2.	Deepanshi (H)	2683	M.Sc.II
3.	Bhawana (H)	2682	M.Sc.II
4.	Kanak (H)	2677	M.Sc.II

  
**Principal,  
PGGCG-11, Chd.**

**Office of the Principal, Post-Graduate Government College for Girls,  
Sector-11, Chandigarh.**

It is certified that following are the bonafide students of this college who will go for an industrial visit at FabTech, Mohali to be held on 25<sup>th</sup> Nov., 2021.

S.No.	Name	Roll No.	Class
1.	Nikita	2656	M.Sc.II
2.	Chetna	2684	M.Sc.II
3.	Jasleen	2680	M.Sc.II
4.	Isha	2673	M.Sc.II
5.	Adrija	2676	M.Sc.II

  
Principal,  
PGGCG-11, Chd.

# **M.Sc. Physics**

## **Field Work**



POST GRADUATE GOVERNMENT COLLEGE FOR GIRLS  
SECTOR-11, CHANDIGARH

TELEPHONE 0172-2740614

Ref. No. PG/GC/11/24/6380

DATE 26/05/2020

M.Sc. 2 Physics (2021-22) List of Students (Industrial Visits)

Sr. No.	Roll No.	Student Name	Title of Industrial Visit	Place of Industrial Visit	Date of Industrial Visit
1	2651	NIDHI SHARMA	Working of Inverter	Luminous Power Technologies Pvt Ltd. Gagret (H.P.)	25-Nov-21
2	2652	ANJALI	Working of Motherboard, PCB Design and PLCC	Punjab Communications Limited, SAS Nagar, Mohali	25-Nov-21
3	2653	Ashima Bhuyan	Printed Circuit Boards (PCB) Design and PLCC	Punjab Communications Limited, SAS Nagar, Mohali	25-Nov-21
4	2656	Nikita Chhabra	Working of Welding Machines	FABTECH, Phase 9, Mohali	25-Nov-21
5	2659	ARSHDEEP VERMA	Working of Motherboard, PCB Design and PLCC	Punjab Communications Limited, SAS Nagar, Mohali	25-Nov-21
6	2661	Monika Sharma	Surface Mount Devices (SMD) Assembly	Punjab Communications Limited, SAS Nagar, Mohali	25-Nov-21
7	2663	Simran	Window Air Conditioner : Its Types and Working	Amber Enterprises India Limited, Rajpura(Punjab)	25-Nov-21
8	2664	Navneet Kaur	Working of Window Air Conditioner	Amber Enterprises India Limited, Rajpura(Punjab)	25-Nov-21
9	2665	Rayman Goel	Surface Mount Devices (SMD) Assembly	Punjab Communications Limited, SAS Nagar, Mohali	25-Nov-21
10	2669	JASMEEN KAUR	Solder Paste Screen Printer : Assembly of Components	Punjab Communications Limited, SAS Nagar, Mohali	25-Nov-21
11	2670	MAHIMA KAUSHIK	Solder Paste Screen Printer : Assembly of Components	Punjab Communications Limited, SAS Nagar, Mohali	25-Nov-21

TELEFAX : 0172-2740614

www.gcg11.org

www.gcg11.ac.in

E-mail : principal\_gcg@yahoo.com

12	2671	Shikha Pathania	Working of Motherboard, PCB Design and PLCC	Punjab Communications Limited, SAS Nagar, Mohali	25-Nov-21
13	2672	MANSI RATHOUR	Working of Window Air Conditioner	Amber Enterprises India Limited, Rajpura(Punjab)	25-Nov-21
14	2673	Isha	Working of Welding Machines	FABTECH, Phase 9, Mohali	25-Nov-21
15	2674	Sophia	Working of Motherboard, PCB Design and PLCC	Punjab Communications Limited, SAS Nagar, Mohali	25-Nov-21
16	2675	Navjot kaur	Working of Window Air Conditioner	Amber Enterprises India Limited, Rajpura(Punjab)	25-Nov-21
17	2676	Adrija	Working of Welding Machines	FABTECH, Phase 9, Mohali	25-Nov-21
18	2677	Kanak	Construction and Working of a Tractor	Mahindra and Mahindra Limited, SAWARAJ Division, Mohali	01-Dec-21
19	2678	Sheetal thakur	Working of Motherboard, PCB Design and PLCC	Punjab Communications Limited, SAS Nagar, Mohali	25-Nov-21
20	2680	Jasleen Kaur	Working of Welding Machines	FABTECH, Phase 9, Mohali	25-Nov-21
21	2681	Rishika Gupta	Construction and Working of a Tractor	Mahindra and Mahindra Limited, SAWARAJ Division, Mohali	01-Dec-21
22	2682	Bhawna	Construction and Working of a Tractor	Mahindra and Mahindra Limited, SAWARAJ Division, Mohali	01-Dec-21
23	2683	Deepanshi	Construction and Working of a Tractor	Mahindra and Mahindra Limited, SAWARAJ Division, Mohali	01-Dec-21
24	2684	CHETNA SHARMA	Working of Welding Machines	FABTECH, Phase 9, Mohali	25-Nov-21
25	2685	Navee Thalwal	Solder Paste Printing	Punjab Communications Limited, SAS Nagar, Mohali	25-Nov-21

*Sham*

Head  
Dept of PHYSICS  
PGGCG-11, Chandigarh

*Sham*  
PRINCIPAL

PGGCG-11, Chandigarh  
Post. Graduate Govt. College for Girls  
Sector 11, Chandigarh



# **M.A. Psychology**

## **Project Work**



**POST GRADUATE GOVERNMENT COLLEGE FOR GIRLS**  
SECTOR-11, CHANDIGARH

TELEPHONE 0172-2740614

Ref. No. 149/CH/11/22/6381

DATE 26/5/2021

**Project Work – MA Psychology 2021-2022**

Sr. No.	ROLLNO	NAME	TITLE	PROFESSOR	Out of 10
1.	2379	Aastha	COVID-19 Stress in relationship with Self Efficacy and Self Esteem	Dr.Ritu Sekhri	8
2.	2308	Afreen	Connectedness to nature with happiness and body appreciation	Dr.Ritu Sekhri	9
3.	2323	Anju	COVID-19 stress and motivation to learn among students – Impact of COVID-19 on education	Dr.Mitika Kanwar	8
4.	2336	Anmol Jaswal	Social anxiety, emotional intelligence and their impact on interpersonal adjustment	Dr.Bani Narula	9
5.	2385	Arushee	Predictors of Academic Achievement: Personality traits and Learning Style	Dr.Mitika	10
6.	2329	Ayesha Ali Khan	Social networking addiction and its correlates	Dr.Mitika	9
7.	2322	Devyani	Body consciousness in relation to Self Esteem and Life Satisfaction among college going students	Dr.Vijay Kumar	9
8.	2334	Ekam Chahal	Attitude towards Cosmetic surgery among Indian Adult Women: Role of Self Esteem, Religious faith and Narcissism	Dr.Bani Narula	10
9.	2349	Gunjan Tanta	The Effect of Internet Addiction on Altruism, Coping strategies and Happiness	Dr.Vijay Kumar	9
10.	2314	Gunreet	Perseverative thinking style and health	Dr.Mitika Kanwar	8
11.	2339	Harshneet Kaur	Emotional Intelligence and its relationship with social anxiety and stress among adolescents	Dr.Vijay Kumar	8
12.	2315	Kritika	Comparison of Lawyers and teachers on Gratitude, General Happiness and Meaning in Life	Dr.Vijay Kumar	8
13.	2378	Lavisha	Relationship between self confidence, self esteem and perceived stress among young adults	Dr.Ritu Sekhri	7
14.	2303	Metali Gupta	Role of Personality and Emotional Intelligence in Prosocial Behavior	Dr.Bani Narula	10
15.	2313	Muskan Ahuja	Optimism and Resilience in relation to Academic Stress among adolescents	Dr.Bani Narula	8
16.	2328	Muskan Chauhan	Relationship of Social Comparison and Substance Abuse With Rumination, Emotional Distress and Suicidal Ideation	Dr.Vijay Kumar	8
17.	2304	Nemesha Panwar	Social Desirability and its relationship with Distress, Self Esteem and	Dr.Ritu Sekhri	10

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			Personality: Gender differences		
18.	2326	Niharika Sharma	Person's music preference correlates with Personality and Gender	Dr. Mitika Kanwar	9
19.	2325	Nisha	Predictors of Youth Identity Development	Dr. Ritu Sekhri	9
20.	2332	Pavneet	Forgiveness, Gratitude and Empathy	Dr. Bani Narula	9
21.	2327	Preety Bala	Impact of Self Esteem and Suggestibility on False Memory	Dr. Bani Narula	10
22.	2330	Pritika	Relationship with Creativity with Resilience and Psychological Well Being in the last 12 months of pandemic: A retrospective analysis	Dr. Mitika Kanwar	9
23.	2383	Priyanka	Comparative Study of Working and Non Working married Women on Anxiety and Adjustment	Dr. Bani Narula	8
24.	2382	Richa Bagga	Goal setting and fear of failure among adolescents	Dr. Vijay Kumar	8
25.	2311	Ritu	Birth order and its influence on person's personality and intelligence	Dr. Mitika Kanwar	8
26.	2321	Saba Siddiqui	Comparative study of breakfast eaters and non breakfast eaters on Mood, Attention and Memory Ability	Dr. Mitika Kanwar	10
27.	2337	Samiksha Rawat	Predictors of Academic Procrastination: Academic Stress and Self Regulation	Dr. Ritu Sekhri	10
28.	2307	Shivani Bhaduria	Comparing daughters of homemakers and working mothers on achievement motivation and emotional intelligence	Dr. Ritu Sekhri	10
29.	2344	Urvashi	Predictors of Phubbing Behavior: Social media usage and loneliness	Dr. Vijay Kumar	10
30.	2381	Vanshika Sharma	Relationship between Physical Activity, Psychological Well Being and Perceived Stress	Dr. Vijay Kumar	7
31.	2350	Vidhuitma	Comparative Study of Exercisers and Non Exercisers on Mental Well Being, Self Efficacy and Grit	Dr. Mitika Kanwar	9

*Khalu*

Head

Dept of Psychology  
PGGCG-11, Chandigarh

*Anand*

PRINCIPAL

PGGCG-11, Chandigarh  
Post Graduate Govt. College for Girls  
Sector 11, Chandigarh

# **M.Com.**

# **Project Work**



**POST GRADUATE GOVERNMENT COLLEGE FOR GIRLS**  
SECTOR-11, CHANDIGARH

TELEPHONE 0172-2740614

Ref. No. PGG/11/22/6531

DATE 08/06/2022

**M.Com Project Work 2021-22**

Sr.No.	Roll No.	Name	Title of the Project work/field work/internship
1	7801	NANCY	Financial Statement Analysis of the Kaithal Central Cooperative Bank Ltd
2	7803	MAHIMA	Employee Motivation and Effectiveness of Reward System in Crownmed Biotech
3	7804	MUSKAN	Customer Satisfaction
4	7806	SAHIB KAUR	Job Satisfaction of Employees ofINFOSYS
5	7807	DIVYA KUMARI	Employee Satisfaction of UnitedGears Company
6	7810	ANUMEET KAUR	Consumer Perception Towards theE-Banking Services of HDFC Bank Ferozepur
7	7811	AMISHA VERMA	Products and Services Offered by Kotak Mahindra Bank
8	7815	RIDHI THAKUR	Performance Appraisal of Employees at Organisation
9	7817	PRAGATI KATOCH	Job Satisfaction of the Employeesof Game app Studio
10	7818	KULVIR KAUR	Customer Satisfaction in LICProducts and Services
11	7820	VANITA KUMARI	Job Satisfaction of Employees ofVimal Electrial Ltd
12	7821	ALKA THAKUR	Customer Perception TowardsCustomer Services Provided Through E-Banking by Kotak Mahindra Bank
13	7825	ISHITA SHARMA	Wages and Salary of Employees in firm
14	7826	RIYA GARG	Consumer Satisfaction Towards Products and Services of HDFC Bank
15	7829	JASPREET KAUR	Consumer Satisfaction from E-Banking Services in HDFC Bank
16	7831	SIMRAN KAUR	Comparative Analysis of Productsand Services of HDFC Bank
17	7834	Nikita Tiwari	Financial Statement and AuditQuality of Oil and Natural GasCorporation
18	7835	AARTI	Customer Perception Towards Operation and Customer ServicesProvided Through E-Banking (AU Small Finance Bank)
19	7836	ANJALI	Consumer Behaviour TowardsVerka Products
20	7837	AMARPREET KAUR	A Study on Customer Awareness Towards E-Banking Services of State Bank of India with Referenceto Mundi Kharar city
21	7839	KOMALPREET KAUR	Customer Perception TowardsReliance Trends

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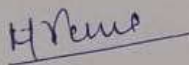
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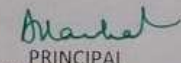
E-mail : principal\_gcg@yahoo.com



19	7836	ANJALI	Consumer Behaviour Towards Verka Products
20	7837	AMARPREET KAUR	A Study on Customer Awareness Towards E-Banking Services of State Bank of India with Reference to Mundi Kharar city
21	7839	KOMALPREET KAUR	Customer Perception Towards Reliance Trends
22	7840	ANUSHRI GARG	Customer Perception Towards E-Banking Services of HDFC Bank
23	7842	STUTI PARIHAR	Study of Practices in Industrial Performance Department of NESTLE Company
24	7843	PRIYANKA GARG	Customer Perception towards Samsung Mobile
25	7844	KOMAL	Customer Satisfaction Towards Bajaj Home Appliances
26	7846	SIMRAN DHIMAN	Customer Perception Towards Departmental Stores
27	7847	SHIVANGI SAINI	Consumer Satisfaction from Kapila Roasters
28	7848	ISHA	Customer Perception Towards Advertising on Social Media
29	7849	PARIKSHA	E-Recruitment and its Impact on Jobseekers
30	7850	PRABHJOT KAUR	Consumer Perception Towards E-Banking Products /Services of Public Sector Banks
31	7851	PRIKSHA RANI	E-Banking System in HDFC Bank
32	7852	MANDEEP KAUR	Study on Employees Motivation at HDFC Bank
33	7854	RAJITA DEVI	Impact of Online Shopping advertisement on Consumer Buying Rate
34	7855	SWATI GILL	Employee Satisfaction of Employees of Verka Company
35	7856	POOJA DEVI	Consumer Satisfaction Towards Verka Product
36	7857	PRACHI	Customer Satisfaction

As per the Instructions from the Panjab University, the students prepared the project report at PGGCG-11, CHD from Secondary Data as the Panjab University Examinations coincided with the Summer Vacations and hence there was no time for Summer Training of 4 to 6 weeks.

  
Head  
Dept of Commerce  
PGGCG-11, Chandigarh

  
Principal  
PGGCG-11, Chandigarh  
Post Graduate College for Girls,  
Sector 11, Chandigarh

# **PGDCA**

## **Project Work**





POST GRADUATE GOVERNMENT COLLEGE FOR GIRLS  
SECTOR-11, CHANDIGARH

TELEPHONE 0172-2740614

Ref. No. PGCG/11/22/1670

DATE 18/5/22

NUMBER OF STUDENTS UNDERTAKING PROJECT WORK/ FIELD WORK/  
INTERNSHIPS PGDCA SESSION 2021-22

Sr No	Roll No	Name	Project Name
1	8151/21	MANSI SHARMA	Website on "Online Coaching"
2	8152/21	SALONI	Website on "Online Coaching"
3	8153/21	AMISHA	Website on "Online Coaching"
4	8156/21	SWETA KUMARI	Online attendance system
5	8157/21	SHILPA DEVI	Online attendance system
6	8158/21	AANCHAL YADAV	Online attendance system
7	8159/21	TAVLEEN KAUR	Website on ""Bridal Makeup"
8	8160/21	MANSI	Website on ""Bridal Makeup"
9	8161/21	YASHU THAKUR	Website on Health and Yoga Tips
10	8162/21	JAGRITI THAKUR	Website on Health and Yoga Tips
11	8164/21	ANANDITI RAO	Website on Health and Yoga Tips
12	8165/21	SHWETA	Library management system
13	8167/21	ASHA	Library management system
14	8168/21	SIMRAN BALA	Library management system
15	8169/21	AMRIT KAUR	Student Information System
16	8170/21	RASHMI GARG	Student Information System
17	8171/21	HARLEEN KAUR	Student Information System
18	8172/21	HARPREET KAUR	Himachal Tourism
19	8173/21	AAKRITI YADAV	Himachal Tourism
20	8174/21	KIRANDEEP KAUR	Himachal Tourism
21	8175/21	DEEPALI	Website on "History of India"
22	8176/21	MANIKA SHARMA	Website on "History of India"
23	8177/21	GAGANPREET KAUR	Website on "History of India"

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24	8179/21	BHAWANA CHAUDHARY	Coaching management system
25	8180/21	RIYA JINDAL	Coaching management system
26	8181/21	KIRANVEER KAUR	Coaching management system
27	8182/21	PRABHJOT KAUR	Website on "History of Punjab"
28	8183/21	MEGHA	Website on "History of Punjab"
29	8184/21	DIKSHA SHARMA	Website on "History of Punjab"

*M. Rana*  
Head  
Dept of Computer Application  
PGGCG-11, Chandigarh

*Anshul*  
Principal  
PGGCG-11, Chandigarh  
Post Graduate College for Girls  
Sector 11, Chandigarh

# **BCA**

# **Project Work**



POST GRADUATE GOVERNMENT COLLEGE FOR GIRLS  
SECTOR-11, CHANDIGARH

TELEPHONE 0172-2740614

Ref. No. P.G.C.G.11/22/6532

DATE 08/06/22

NUMBER OF STUDENTS UNDERTAKING PROJECT WORK/ FIELD WORK/  
INTERNSHIPS BCA SESSION 2021-22

Sr. No.	Roll No.	Name of the Student	Name of the Project
1	11002/19	Priya Sahu	Online Food Ordering System
2	11003/19	Madhvi Singh	Airline Reservation System
3	11004/19	Sneha Bhosale	Salon Management System
4	11005/19	Upasana Negi	Car Selling Site
5	11006/19	Deepshikha	Online Movie Ticket Booking
6	11007/19	Parneet Kaur	Online Food Ordering System
7	11008/19	Anuj	Airline Reservation System
8	11009/19	Sakshi Saklam	Salon Management System
9	11011/19	Ishmita Marya	Student Management System
10	11013/19	Jyotsna Sehgal	Car Selling Site
11	11014/19	Nidhi Sharma	Airline Reservation System
12	11015/19	Damanpreet Kaur	Salon Management System
13	11016/19	Anchal	Car Selling Site
14	11017/19	Darshjot Kaur Sohi	Student Management System
15	11018/19	Arti	Online Voting System
16	11019/19	Archana Yadav	Student Management System
17	11020/19	Shruti Saroha	Motor Hub
18	11021/19	Yashvi Namdev	Online Voting System
19	11023/19	Kareena Negi	Online Shopping Website
20	11024/19	Khushi Joshi	Online Voting System
21	11025/19	Umanj	Motor Hub
22	11026/19	Ruhina Bano	Hospital Management System
23	11027/19	Sapna	Motor Hub

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24	11029/19	Monika	Hospital Management System
25	11030/19	Simrandeep Kaur	Pharmacy management system
26	11032/19	Pooja	E-Commerce Website
27	11033/19	Yashica	Hotel Management System
28	11034/19	Sakshi Sharma	Hospital Management System
29	11036/19	Simranjeet Kaur	flight reservation
30	11038/19	Naina	Pharmacy management system
31	11039/19	Anuradha	Hotel Management System
32	11040/19	Snehdeep Kaur	Online news website
33	11041/19	Anjali	flight reservation
34	11042/19	Shweta	Pharmacy management system
35	11043/19	Shweta	Racing Car Game
36	11045/19	Priya Joshi	E-Library Management System
37	11046/19	Twinkle	flight reservation
38	11047/19	Harnoor Kaur	flight reservation
39	11048/19	Deepika Dhiman	Website for selling AC
40	11049/19	Radhika Kaushal	Bus Ticket Reservation
41	11051/19	Sapna Thayat	Online news website
42	11053/19	Narinder Kaur	Flight reservation
43	11054/19	Rakhi	Bus Ticket Reservation
44	11055/19	Priyanshu Verma	Tic Tac Toe
45	11056/19	Somssi Pathania	Bus Ticket Reservation
46	11057/19	Sunita Gautam	Website for selling AC
47	11058/19	Bharti Juyal	Tic Tac Toe
48	11059/19	Vini	Pacman Game
49	11060/19	Samreeta Yadav	Flight reservation
50	11061/19	Aarti	Pacman Game
51	11062/19	Kanchan Bansal	Website for selling AC
52	11063/19	Priya Gupta	Pizza Delivery System
53	11064/19	Deepali	Online news website
54	11065/19	Rajeshwari A	E-Library Management System



55	11066/19	Ramanpreet Kaur	Pizza Delivery System
56	11067/19	Simrandeep Kaur	Consultancy Website
57	11068/19	Khushbu	Restaurant Reservation System
58	11069/19	Amarjot Kaur	Campus Placement System
59	11070/19	Karandeep Kaur	E-Library Management System
60	11071/19	Saeeda	Blogging Site
61	11072/19	Rahima	Campus Placement System
62	11074/19	Arshia Gupta	Restaurant Reservation System
63	11076/19	Sehajpreet Kaur	Consultancy Website

As per the Instructions from the Panjab University, the students prepared the project report at PGGCG-11, CHD from Secondary Data as the Panjab University Examinations coincided with the Summer Vacations and hence there was no time for Summer Training of 4 to 6 weeks.

M. P. Kaur  
Head  
Dept of Computer Application  
PGGCG-11, Chandigarh

Principal  
Principal  
PGGCG-11, Chandigarh  
Post Graduate Govt. College for Girls  
Sector 11, Chandigarh

# **Geography**

## **Project Work**





POST GRADUATE GOVERNMENT COLLEGE FOR GIRLS  
SECTOR-11, CHANDIGARH

TELEPHONE 0172-2740614

Ref. No. P/GC/41/2022/6169

DATE 18/05/22

BA-III GEOGRAPHY PRACTICAL (FIELD WORK/ASSIGNMENT) 2021-22

Roll No	Name	Title of the Project
10003/19	AKSHITA THAKUR	Types of Field Survey, Methodology and Data types
10010/19	ANCHAL SHARMA	Types of Field Survey, Methodology and Data types
10012/19	KOMAL	Types of Field Survey, Methodology and Data types
10014/19	SHWETA KUMARI	Types of Field Survey, Methodology and Data types
10021/19	POOJA	Types of Field Survey, Methodology and Data types
10027/19	HARSHIL MALIK	Types of Field Survey, Methodology and Data types
10036/19	APARNA SINGH	Types of Field Survey, Methodology and Data types
10041/19	NANDINI CHANANA	Types of Field Survey, Methodology and Data types
10050/19	ANJALI GILL	Types of Field Survey, Methodology and Data types
10054/19	GARIMA	Types of Field Survey, Methodology and Data types
10055/19	BHARTI	Types of Field Survey, Methodology and Data types
10056/19	NIDHI THAKUR	Types of Field Survey, Methodology and Data types
10060/19	SANDALI THAKUR	Types of Field Survey, Methodology and Data types
10069/19	ANMOL	Types of Field Survey, Methodology and Data types
10082/19	KIRTI	Types of Field Survey, Methodology and Data types
10083/19	RIYA KUMARI	Types of Field Survey, Methodology and Data types
10085/19	ANNU	Types of Field Survey, Methodology and Data types
10094/19	KANWALDEEP KAUR	Types of Field Survey, Methodology and Data types
10097/19	MUSKAAN	Types of Field Survey, Methodology and Data types
10109/19	KHYATI SHARMA	Types of Field Survey, Methodology and Data types
10110/19	NISHI	Types of Field Survey, Methodology and Data types
10119/19	AANCHAL RATHI	Types of Field Survey, Methodology and Data types
10121/19	NANDANI KUMARI	Types of Field Survey, Methodology and Data types
10125/19	KARIMA	Types of Field Survey, Methodology and Data types
10128/19	SHREYA SHARMA	Types of Field Survey, Methodology and Data types
10129/19	NIKITA CHAUHAN	Types of Field Survey, Methodology and Data types
10130/19	SAHIBNOOR	Types of Field Survey, Methodology and Data types
10133/19	KAMINI SHUKLA	Types of Field Survey, Methodology and Data types
10134/19	PURNEET KAUR	Types of Field Survey, Methodology and Data types
10141/19	PRITI	Types of Field Survey, Methodology and Data types
10146/19	NIDHI	Types of Field Survey, Methodology and Data types
10148/19	SIMRANJIT KAUR	Types of Field Survey, Methodology and Data types
10160/19	SULEKHA	Types of Field Survey, Methodology and Data types
10169/19	JASLEEN KAUR	Types of Field Survey, Methodology and Data types
10170/19	MANISHA GHAGHAT	Types of Field Survey, Methodology and Data types
10172/19	MEHAK GANERIWALA	Types of Field Survey, Methodology and Data types
10175/19	ANMOL DEVI	Types of Field Survey, Methodology and Data types
10180/19	BHAVYA	Types of Field Survey, Methodology and Data types
10188/19	MANISHA	Types of Field Survey, Methodology and Data types
10189/19	SHILPA JAIN	Types of Field Survey, Methodology and Data types


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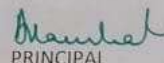
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10192/19	RIYA THAKUR	Types of Field Survey, Methodology and Data types
10193/19	BHAVYA SHARMA	Types of Field Survey, Methodology and Data types
10197/19	RUBAINA	Types of Field Survey, Methodology and Data types
10214/19	LOVEPREET KAUR	Types of Field Survey, Methodology and Data types
10216/19	POOJA	Types of Field Survey, Methodology and Data types
10220/19	ISHANI RAWAT	Types of Field Survey, Methodology and Data types
10230/19	AARTI	Types of Field Survey, Methodology and Data types

  
 Head  
 Dept of Geography  
 PGCG-11, Chandigarh

  
 PRINCIPAL  
 PGCG-11, Chandigarh  
 Post. Graduate Govt. College for Girls  
 Sector 11, Chandigarh

# **Functional English**

## **Internship**



Kid Aptivity Technologies Private Limited  
Registered Address: Flat No- 251, Block-2, Fifth Floor, Plot 15C, Delhi Apartments, CGHS  
Limited, Sec-22, Dwarka, Delhi-110077  
Phone: +91 9900424316 | Email: connect@q-in-1.com | Website: [www.q-in-1.com](http://www.q-in-1.com)  
CIN: U80903DL2019PTC345843

Date: 30/04/2022

TO WHOMSOEVER IT MAY CONCERN

Subject: Work Experience Certificate cum LOR

This is to certify that Ms. Sukhmani Bedi, was working with us as Online instructor for English language for our LingoQ program from 15/4/2021 to 15/4/2022.

She worked diligently during her entire tenure and ensured her responsibilities as an educator were fulfilled to the best. Her overall performance during the tenure was found to be **Very Good**.

We wish her all the best for her future endeavors.

On behalf of Kid Aptivity Technologies Private Limited

*Monika*

Name: Monika Mukhlja

Designation: HR-Business Partner, Kid Aptivity Technologies

*Sukhmani*  
*31/05*



# THE TRIBUNE TRUST

Sector 29 C, Chandigarh - 160030

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(Publications: The Tribune, Dainik Tribune & Punjabi Tribune)

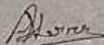
Date - 2-4-2022

## TO WHOM IT MAY CONCERN

This is to certify that Ms. Navya Singh student of Government college for girls Chandigarh has successfully completed a summer internship in the field of reporting from 1-03-2022 to 31-03-2022 under the guidance of Ambika Sharma, Senior Staff Correspondent.

During the period of her internship programme with us, she has been exposed to different processes and was found diligent, hardworking and inquisitive.

We wish her every success in her life and career.



Authorized Signature

THE TRIBUNE TRUST  
SECTOR 29 C, CHANDIGARH  
INDIA

Navya  
27/03/2022  
Self attested

NAME : Navya Singh  
CLASS : BA IY  
ROLL No : 10025

Affiliation No. 12128

Ph. 01652-267517

# ਮਾਲਵਾ ਪਬਲਿਕ ਹਾਈ ਸਕੂਲ

ਸਾਹਮਣੇ ਸਰਕਾਰੀ ਹਸਪਤਾਲ ਪਿੰਡ ਖਿਆਲਾ ਕਲਾਂ

ਨੰ



ਮਿਤੀ.....

## TO WHOM MAY CONCERN

This is certify that Cheetakshi D/O Mr. Rajesh Sharma. Roll Number 10658/19, College name Post Graduate Government College for Girls, Sector 11, Chandigarh. She has completed her Teaching as English teacher in this school. From 1st January 2022 to 31st January 2022. We found her responsible enthusiastic and hardworking during her working tenure. We wish her success in her future endeavors.

*[Signature]*  
ਮੁੱਖ ਅਧਿਆਪਕ  
ਮਾਲਵਾ ਪਬਲਿਕ ਹਾਈ ਸਕੂਲ  
ਖਿਆਲਾ ਕਲਾਂ (ਮਾਨਸਾ)  
ਸ਼ਾਖਾ ਨੰ: 12128

**Principal**

*Self-Attested  
Cheetakshi*



Affiliation No. 12128

Ph. 01652-267517

# ਮਾਲਵਾ ਪਬਲਿਕ ਹਾਈ ਸਕੂਲ

ਸਾਹਮਣੇ ਸਰਕਾਰੀ ਹਸਪਤਾਲ ਪਿੰਡ ਖਿਆਲਾ ਕਲਾਂ

ਨੰ:



ਮਿਤੀ.....

## TO WHOM MAY CONCERN

This is certify that Snow Saadgi D/O Mr. Gurpreet Singh. Roll Number 10562/19, College name Post Graduate Government College for Girls, Sector 11, Chandigarh. She has completed her Teaching as English teacher in this school. From 1st January 2022 to 31st January 2022. We found her responsible enthusiastic and hardworking during her working tenure. We wish her success in her future endeavors.

*[Signature]*  
ਮਾਲਵਾ ਪਬਲਿਕ ਹਾਈ ਸਕੂਲ  
ਖਿਆਲਾ ਕਲਾਂ (ਮਾਨਸਾ)  
ਸ਼ਾਖਾ ਨੰ: 12128

**Principal**

Self Attested  
Snow Saadgi



# Manipur Mail

Oldest English Daily in Manipur  
RNI 34298/80

Uripok Ningthoukhongjam Leikai  
Imphal, Manipur  
Pin - 795001

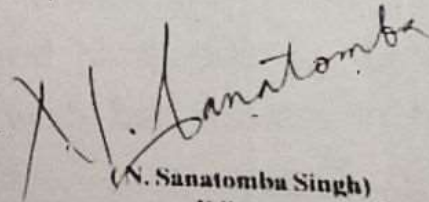
Ref: Lp3/21

Dated: 11-2-2022

## TO WHOM IT MAY CONCERN

This is to certify that Miss Anbum Yeeshika Sharma of Post Graduate College for Girls, Chandigarh has successfully completed her internship course from January 10 to February 10, 2022 at Manipur Mail.

During the period of her internship with this organisation she was punctual, hardworking and inquisitive. I wish her success in her future life.

  
(N. Sanatomba Singh)  
Editor  
Editor  
Manipur Mail

Self-Attested  
v. Yeeshika Sh.  
10194/19  
7th June '22

manipurmail@yahoo.com, manipurmail@rediffmail.com, Tel: 03852412550



# S.S. PUBLIC SCHOOL

(PERMANENT RECOGNISED)

Near Bus Stop, Ramgarh (Panchkula, Haryana)  
Ph. : 09464553344, 094172-50388

School Regn. No.  
D.E.E. Officer  
G/2001/2120-25  
Dated 01.05.2001

Ref. No. 308

Dated 02-12-2021

## TEACHING EXPERIENCE CERTIFICATE

Certified that Miss SHASHI SHARMA D/o Mr. RAJENDER KUMAR SHARMA.  
having qualification 10<sup>TH</sup>, 12<sup>TH</sup>, BA-2<sup>ND</sup> YEAR has been working in this school  
since 1-10-2021 to 30-10-2021 as a Primary teacher.

She has one month of teaching experience as a English teacher.

During her service in this school, her work and conduct remained good. Her  
general behaviour was good, she never gave us a chance to complain.

We wish her success and growth in her future.

  
Principal  
S. S. Public School  
RAMGARH (PANCHKULA)  
PRINCIPAL

Self attested

Roll.no- 10142(BA-3)  
Name- Shashi Sharma



Registered MSME under Government of India



# CERTIFICATE

OF APPRECIATION

This is to certify that

*Ms. Tanvi Pruthi*

of GCG-11, Sector 11, Chandigarh, completed her tenure as the Senior Content Writer,  
with The Chaotic Quills, from 1st February, 2022 to 28th February, 2022.

Her work was highly commendable and we wish her all the best for her future endeavor's!

Sumit Budhiraja  
Founder

Shrey Mehndiratta  
Founder





# BRIGHT FUTURE I. A .A SR. SEC. SCHOOL

Affiliation No :- 531583 (Affiliation to C.B.S.E. New Delhi) School Code :- 4156

V.P.O. KHANAHMEDPUR DISTT. AMBALA, HARYANA- 133202

Run By: THE GURU NANAK EDUCATION SOCIETY

Cont:- 7268000078 , 7267000078

E-MAILS :- [bfiakalacademy@gmail.com](mailto:bfiakalacademy@gmail.com)

Ref.No- BFIAA-22/522

DATE: 27-05-2022

## TO WHOM IT MAY CONCERN

This is to certify that Ms. Arshdeep Kaur D/O Sh. Satvinder Singh R/O V.P.O. Dhin , Teh. Barara Dist. Ambala, the student of B.A. III year of Post Graduate Government College for Girls, Sector 11, Chandigarh has successfully completed 2 months internship in teaching of English Language (Grade 6 to 7) at our school Bright Future I.A.A. , Khanahmedpur from 27-12- 2021 to 28-2-2022.

During this period of her internship program with us she has been exposed to different processes of teaching methodology and her conduct was found as punctual, hardworking and inquisitive.

We wish her very best in all her future endeavours.

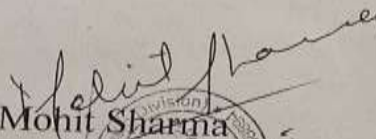
SKaur  
27/5/2022  
PRINCIPAL  
BRIGHT FUTURE I.A.A.  
SR. SEC. SCHOOL  
KHANAHMEDPUR (AMBALA)



### To Whom It May Concern

This is to certify that Ms. Shelza Bhatti D/o Mr.Naveen Bhatti has successfully completed internship with MY FM- Chandigarh from 28<sup>th</sup> April 2022 to 16<sup>th</sup> June 2022. During this period, Ms.Shelza has learnt various aspects of Radio Copywriting, Radio Jockeying, Production, Handling OB visits and radio activities. Her conduct during the internship was very good. We at MY FM wish her all the best for her future endeavours.

Date 16<sup>th</sup> June 2022

  
Mohit Sharma  
Programming Head  
MY FM Chandigarh  
Mob. No. 9720108405

Self attested  
Name - Shelza (BA-  
1023)

**D B CORP LIMITED - RADIO DIVISION**

Plot No.11-12, 1st Floor, Sector-25, Chandigarh - 160025, Punjab, Phone: 0172-4602657

Office : Plot No. 280, Sarkhej Gandhi Nagar Highway, Near YMCA Club, Makarba, Ahmedabad - 380051, Gujarat. Tel.: 07

CIN : L22210GJ1995PLC047208





# De Haath Society

## Letter of recommendation

To whosoever it may concern

It is with immense pleasure that I take this opportunity to write a personal recommendation for Ms. Samridhi Anand. She has interned with us for the month ending March, 2022. In the capacity of content-writing intern, her responsibility was to collate a series of anecdotal accounts by people who have been through tough times in life and have overcome those challenges.

Ms. Samridhi is committed to her work. She is able to learn quickly the way to assess the needs and improvise new ways to approach problems. While new approaches are useful, she is also a very good learner and listens to new perspectives. I would like to highlight that she ensures that she does a complete background study before commencing on a task. Her sense of ownership with the organisation makes her help other people in the team also.

I, therefore, recommend her for engagement in areas requiring the aforesaid skills. I am confident that she will be equally enthusiastic and dedicated to your institution thus giving it her best.

Always feel free to contact for more information on the above subject.

Sincerely

Vasudev Bajpai  
Director, De Haath Society  
Phone: +91-8081092940

De Haath Society is a non-government organisation registered under the Societies Registration Act, 1860 (reg. no. 1134)  
Address: 7 Krishna Colony, Mahanagar, Lucknow - 226006. Phone no. - 8081092940

Name:- Samridhi Anand  
Class: BA-III Roll No. 10395

# Manipur Mail

Oldest English Daily in Manipur  
RNI 34298/80

Uripok Ningthoukhongjam Leikai  
Imphal, Manipur  
Pin - 795001

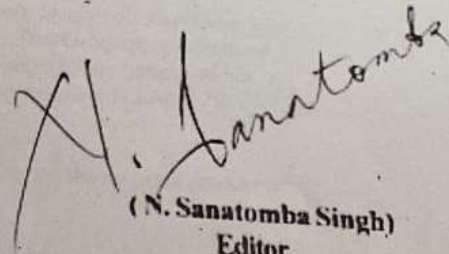
Ref: Lp/3/20

Dated: 11-2-2022

## TO WHOM IT MAY CONCERN

This is to certify that Miss Laishram Chanu Sushma of Post Graduate College for Girls, Chandigarh has successfully completed her internship course from January 10 to February 10, 2022 at Manipur Mail.

During the period of her internship with this organisation she was punctual, hardworking and inquisitive. I wish her success in her future life.



(N. Sanatomba Singh)  
Editor

Editor  
Manipur Mail

Laishram Chanu Sushama  
Class: BA-III Roll no: 10195/19  
Subject: Functional English

Sushama Laishram



Name- Vaishali Ghai

Roll No: 10137

Class - B.A. 3

## Rotaract South Asia MDIO



### TO WHOM IT MAY CONCERN

I wish to send a positive confirmation about Rtr. Vaishali Ghai from Rotaract Club Rajpura, as part of Rotaract South Asia MDIO's Editorial team. She volunteered in the social organization as a Content Writer from 1<sup>st</sup> December 2021 until 31st January 2022. Her valuable contribution towards the team which expands for more than 30 hours of voluntary activities is commendable.

#### About Rotaract South Asia MDIO

RSAMDIO is a Rotary's information sharing body in the region of South Asia which serves more than 100,000 Rotaractors from 3300 Rotaract Clubs spread across India, Nepal, Sri Lanka, Maldives, Pakistan & Bangladesh. RSAMDIO enables cross country multi district events and a platform for wider networking for all its members.

Rtr. Vaishali was assigned the tasks based on her work commitment and hardworking nature. During her time within the team, she has worked on various projects, namely:

- Rotary Workshop – Membership Reporting workshop
- RSAMDIO Talks – Social Media engagement campaign
- ROAR – Rotaract South Asian Outstanding Awards & Recognitions

I wish her good luck and good time in her future endeavours. It was a pleasure working with a person like her in the organization.

Best Regards,  
Yatin Sehgal  
Immediate Past President – Rotaract South Asia MDIO  
District Rotaract Chair 2021-22 – RI District 3090  
PDRR – RI District 3090  
Rotary International District 3090

*Yatin Sehgal*



*Vaishali Ghai*

Together Stronger

Name - Manu Chauhan  
Roll no. 10136  
Class - BA-3

Reference No. : RBM/SW-103



## RAIL BIKASH MANCH

REG NO. RS/KAM (M)/263/U/137 OF 2019-2020 • NITI AAYOG UID NO: AS/2019/0228422

### CERTIFICATE OF COMPLETION

*This is to certify that*

**MANU CHAUHAN**

Successfully completed 1 Month Social Work Internship from  
28/03/2022 to 26/04/2022 with Grade A.



*Deepam Thakuria*

Deepam Thakuria  
PRESIDENT

*Manu*



Kid Aptivity Technologies Private Limited  
Registered Address: Flat No- 251, Block-2, Fifth Floor, Plot 15C, Delhi Apartments, CGHS  
Limited, Sec-21, Dwarka, Delhi-110077  
Phone: +91 9900424316 | Email: connect@q-in-1.com | Website: [www.q-in-1.com](http://www.q-in-1.com)  
CIN: U80903DL2019PTC345843

Date: 30/04/2022

TO WHOMSOEVER IT MAY CONCERN

Subject: Work Experience Certificate cum LOR

This is to certify that Ms. Sukhmani Bedi, was working with us as Online instructor for English language for our LingoQ program from 15/4/2021 to 15/4/2022.

She worked diligently during her entire tenure and ensured her responsibilities as an educator were fulfilled to the best. Her overall performance during the tenure was found to be Very Good.

We wish her all the best for her future endeavors.

On behalf of Kid Aptivity Technologies Private Limited

*Manika*

Name: Monika Mukhlja

Designation: HR-Business Partner, Kid Aptivity Technologies

*Sukhmani*  
31/05





# SHUBHWEB TECHNOLOGY

Software Consulting Services

Date: 30th May 2022

TO WHOMSOEVER IT MAY CONCERN

This is to certify that Ms. Maitri Vats has served as an Intern in this company from November 2021 to March 2022.

She is a diligent, efficient and a hardworking person with a pleasant disposition. She was able to shoulder her responsibilities with sincerity.

We wish her all the success and happiness in her future endeavors.

FOR SHUBHWEB TECHNOLOGY

Shaveta Pal

Director

SOLE PROPRIETOR

*Maitri Vats  
Self attested*

Name - Maitri Vats

Class - B.A. III

Roll no - 10662

Flat No. 101, Block - 3 I,  
Maya Garden Phase 3,  
VIP Road, Zirakpur,  
Punjab - 140603

Tel. 8968813450

shaveta.pal@gmail.com

ASHITA CHAUHAN  
10370  
BA-III  
FUNCTIONAL ENGLISH



# CERTIFICATE OF INTERNSHIP

THIS CERTIFICATE IS PROUDLY PRESENTED TO



*Asmita Chauhan*

Daughter of Sh. Devinder Chauhan, Student of Journalism and Mass Communication, 2020-22, Post Graduate government College for Girls Sector 11 Chandigarh, has completed her internship with EduAdvice, during the period of April 7th 2022 to May 7th, 2022.

During the course of internship she has shown great amount of responsibility.

We wish all the very best for her future.

DATE

8th May 2022

Director

*Sanjay Kumar*

Sanjay Kumar

*Self-attested  
Asmita*

# **M.Sc. ZOOLOGY**

## **Project Work**



POST GRADUATE GOVERNMENT COLLEGE FOR GIRLS  
SECTOR-11, CHANDIGARH

TELEPHONE 0172-2740614

Ref. No. PGCG-11/2021/200/3245

DATE 24/11/21

M.Sc. I Zoology-Sem-1 (2021-22) List of Students (Project Work)

S.no.	Roll No.	Student Name	Project Assigned
1	33861	Akanksha bhawani	General information on Scypha
2	33862	Akanksha Sharma	General information on Paramecium
3	33863	Akshita dhankhar	General information on Obelia
4	33864	AMISHA SONI	General information on Fasciola hepatica
5	33865	ANJALI	General information on Taenia Solium
6	33866	ANJALI	General information on Ascaris
7	33867	DEEPTI SIWACH	Parental Care in Fishes
8	33868	Devyani Sharma	Parental Care in Amphibians
9	33869	Harleen	Parental Care in Birds and Reptiles
10	33870	kimmi chauhan	General information on Exocoetus
11	33871	Meenakshi	General information on Protopterus (Lung fish)
12	33872	NATINDER KAUR	General information on Rhacophorus.
13	33873	Navjot Kaur	General information on Chamaeleon.
14	33874	Neha	General information on Chamaeleon.
15	33875	PALLAVI THAKUR	General information on Python
16	33876	Ridhi	Field study report on Protozoans
17	33877	Rishita	Field study report on helminths
18	33878	Shivangi Bisht	Field study report on insects
19	33879	Shivani	Field study report on fishes
20	33880	SHREIYA SHARMA	Field study report on amphibians
21	33881	SUKHMEEN KAUR	Field study report on reptiles
22	33882	Sumit Gill	Field study report on mammals
23	33883	Sunil	General information on Labeo
24	33884	Vandana Gautam	General information on Rana

Head Dept. of Zoology  
PGCG-11, Chandigarh

Principal  
PGCG-11, Chandigarh

Principal  
Post. Graduate Govt. College for Girls  
Sector 11, Chandigarh

TELEFAX : 0172-2740614

www.pgct11.org

www.pgct11.ac.in

E-mail : principal\_pgct@yahoo.com





POST GRADUATE GOVERNMENT COLLEGE FOR GIRLS  
SECTOR-11, CHANDIGARH

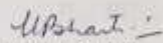
TELEPHONE 0172-2740614


Ref. No. 04/4/2021/200/3867

DATE 04/03/2022

M.Sc. I Zoology-Sem-2 (2021-22) List of Students (Project Work)

S.no	Roll No.	Student Name	Project Assigned
1	33861	Akanksha bhawanl	General information on Earthworm
2	33862	Akanksha Sharma	General information on Chaetopterus
3	33863	Akshita dhankhar	General information on Palaemon
4	33864	AMISHA SONI	General information on Lepisma
5	33865	ANJALI	General information on Cockroach
6	33866	ANJALI	General information on Prawn
7	33867	DEEPTI SIWACH	General information on Dragonfly
8	33868	Devyani Sharma	General information on Termites
9	33869	Harleen	General information on Scorpion
10	33870	kimmi chauhan	General information on Butterflies
11	33871	Meenakshi	General information on Honey bees
12	33872	NATINDER KAUR	General information on Spider
13	33873	Navjot Kaur	General information on Oryctolagus.
14	33874	Neha	General information on Milvus
15	33875	PALLAVI THAKUR	General information on Mosquito
16	33876	Ridhi	General information on House Fly
17	33877	Rishita	General information on Anodonta
18	33878	Shivangi Bisht	General information on Adrea
19	33879	Shivani	General information on Asterias
20	33880	SHREIYA SHARMA	General information on Panthera
21	33881	SUKHMEEN KAUR	General information on Pila
22	33882	Sumit Gill	General information on Gallus
23	33883	Sunil	General information on Ornithorhynchus
24	33884	Vandana Gautam	Bird Migration

  
Head Dept. of Zoology  
PGCGG-11, Chandigarh

  
PRINCIPAL

PGCGG-11, Chandigarh  
Principal  
Post Graduate Govt. College for Girls  
Sector 11, Chandigarh

TELEFAX : 0172-2740614

www.gcg11.org

www.gcg11.ac.in

E-mail : principal\_gcg@yahoo.com



POST GRADUATE GOVERNMENT COLLEGE FOR GIRLS  
SECTOR-11, CHANDIGARH

TELEPHONE 0172-2740614

Ref. No. M/4/11/2022/200/3868

DATE 04/03/2022

M.Sc. 2 Zoology-Sem-4 (2021-22) List of Students (Project Work)

S.No.	Roll No.	Student Name	Project Assigned
1	63231	ANJALI	Tiger
2	63232	ANJALI VERMA	Crocodile
3	63233	Anshu Rani	Hangul
4	63234	Arushi Gupta	Gir lion
5	63235	ATIKA	Leopard
6	63236	Deepti	Peafowl
7	63237	DIVYA KHASA	Barking Deer
8	63238	Farhat Majid	Cranes
9	63239	Gargi Chauhan	Jackals
10	63240	Garima Thakur	Elephant
11	63241	Himani Chawla	Gharial
12	63242	Laiba Parveen	Bison
13	63243	MAHAK	Civet
14	63244	Mamta	Black Bear
15	63245	MANHEER KOUR MALHOTRA	Parakeets
16	63246	Megha Juyal	Gaur
17	63247	Monika Kaushik	Chinkara
18	63248	NETRA	Black Buck
19	63249	NISHA SINGH	Indian wolf
20	63250	PAYAL	Python
21	63251	ROHINI THAKUR	Indian Turtle
22	63252	SHIVANI	Common Langur
23	63253	SHIVETA RANI	Indian Pond Heron
24	63254	Sushmit Chauhan	Sambar
25	63255	Tania	Hyena
26	63256	TITIKSHA	Ostrich
27	63257	URVASHI RAHI	Hippopotamus

*Ushant*  
Head Dept. of Zoology  
PGCG-11, Chandigarh

*Anshu*  
Principal PRINCIPAL  
Post Graduate Govt. College for Girls  
Sector 11, Chandigarh

TELEFAX : 0172-2740614

www.pggt1.org

www.pggt1.ac.in

E-mail : principal\_pggt@yahoo.com



Ref. No. Pg464/2021/200/3246

DATE 24/11/2021

M.Sc. 2 Zoology-Sem-3 (2021-22) List of Students (Project Work)

S.No	Roll No.	Student Name	Project Assigned
1	63231	ANJALI	Diversity of order Lepidoptera
2	63232	ANJALI VERMA	Diversity of order Coleoptera
3	63233	Anshu Rani	Diversity of order Heteroptera
4	63234	Arushi Gupta	Diversity of order Homoptera
5	63235	ATIKA	Diversity of order Hymenoptera
6	63236	Deepti	Diversity of order Isoptera
7	63237	DIVYA KHASA	Diversity of order Diptera (excluding mosquitoes)
8	63238	Farhat Majid	Diversity of Mosquitoes
9	63239	Gargi Chauhan	Diversity of order Thysanura
10	63240	Garima Thakur	Diversity of order Odonata
11	63241	Himani Chawla	Diversity of order Orthoptera
12	63242	Laiba Parveen	Diversity of order Dictyoptera
13	63243	MAHAK	Pests of Sugarcane
14	63244	mamta	Pests of Rice
15	63245	MANHEER KOUR MALHOTRA	Pests of Vegetables
16	63246	Megha Juyal	Pests of Cotton
17	63247	Monika Kaushik	Observational study on life cycle of Callosobruchus maculatus (Pulse beetle)
18	63248	NETRA	Observational study on life cycle of Sitophilus oryzae
19	63249	NISHA SINGH	Observational study on life cycle of Tribolium castaneum (Rust red floor beetle)
20	63250	PAYAL	Observational study on life cycle of Sitotroga cerealella (Angoumois grain moth)
21	63251	ROHINI THAKUR	Pests of Wheat
22	63252	SHIVANI	Pests of fruits
23	63253	SHVETA RANI	Study of different types of larvae in insects
24	63254	Sushmit Chauhan	Study of different types of Pupae in insects
25	63255	Tania	Diversity of Dysdercus singulatus (Red cotton bug)
26	63256	TITIKSHA	Diversity of Dacus cucurbitae (Pumpkin fruit fly)
27	63257	URVASHI RAHI	Diversity of Pyrrilla perpusilla (Sugarcane leaf hopper)

*Upshanti*  
Head Dept. of Zoology  
PGCGT-11, Chandigarh

*Manshah*  
Principal PRINCIPAL  
Post. Graduate Govt. College for Girls  
Sector-11, Chandigarh

# **B.Sc. III ZOOLOGY**

## **Project Work**



POST GRADUATE GOVERNMENT COLLEGE FOR GIRLS  
SECTOR-11, CHANDIGARH

TELEPHONE: 0173-2740614

Ref. No. 190611/2021/300/3834

DATE 03.03.2022

B.Sc. 3 Zoology-Sem-5 (2021-22) List of Students (Project Work)

S. No.	Roll No.	Student Name	Project assigned
1	1906108 2	AANCHAL	Life cycle of Sugarcane leaf hopper ( <i>Pyrilla perpusilla</i> )
2	1906108 3	AANCHAL NEGI	Life cycle of Sugarcane top borer ( <i>Scirpophaga nivella</i> )
3	1906108 4	AARTI	Life cycle of Sugarcane stem borer ( <i>Chilothea infuscatellus</i> )
4	1906108 5	AARUSHI	Life cycle of Pink bollworm ( <i>Pectinophora gossypiella</i> )
5	1906109 9	ADITI SHARMA	Life cycle of Red cotton bug ( <i>Dysdercus ingulatus</i> )
6	1906109 1	AKANKSHA SRIVASTAVA	Life cycle of Cotton grey weevil ( <i>Myliocerus maculosus</i> )
7	1906110 2	ANJALI DEVI	Life cycle of Surface grasshopper ( <i>Chrotogonus trachypterus</i> )
8	1906110 3	ANJALI KUMARI	Life cycle of Cotton jassid ( <i>Empoasca devastans</i> )
9	1906110 4	ANJALI NEGI	Life cycle of Rice Gundry Bug ( <i>Leptocoris varicornis</i> )
10	1906110 5	ANJALI SHARMA	Life cycle of Rice grasshopper ( <i>Hieroglyphus banian</i> )
11	1906111 3	ASHITA KANDAL	Life cycle of Rice Hispa ( <i>Dicladispa armigera</i> )
12	1906112 1	BANITA	Life cycle of Wheat stem borer ( <i>Sesamia inferens</i> )
13	1906112 2	BHARTI	Life cycle of Termites ( <i>Microtermes obesi</i> )
14	1906112 4	ANCHAL	Life cycle of Aphids ( <i>Macrosiphum miscanthi</i> )
15	1906112 5	BHAVIKA BANGARWA	Life cycle of Jassids ( <i>Amrasca</i> sp.)
16	1906112 6	BHAVYA	Life cycle of Red pumpkin beetle ( <i>Aulacophora foveicollis</i> )
17	1906113 0	BHUMIKA SHARMA	Life cycle of Pumpkin fruit fly ( <i>Dacus cucurbitae</i> )
18	1906113 2	CHAHAT PANGOTRA	Life cycle of Hadda beetle ( <i>Epilachna vigintioctopunctata</i> )
19	1906113 3	DEEKSHA LAGWAL	Life cycle of Rice weevil ( <i>Sitophilus oryzae</i> )
20	1906113 8	DHARVI	Life cycle of Pulse Beetle ( <i>Callosobruchus maculatus</i> )
21	1906113 9	DIKSHA JINDAL	Life cycle of Khagra beetle ( <i>Trogoderma granarium</i> )

TELEFAX : 0172-2740614

www.gcg11.org

www.gcg11.ac.in

E-mail : principal\_gcg@yahoo.com

*U. Bhatia*

22	1906114 2	DISHA	Life cycle of Rust red flour beetle ( <i>Tribolium castaneum</i> )
23	1906114 3	DISHU GILL	Life cycle of Lesser grain borer ( <i>Rhizopertha dominica</i> )
24	1906114 9	GARIMA	Life cycle of Rice moth ( <i>Corcyra cephalonica</i> )
25	1906115 0	GOURVI SHARMA	Life cycle of Mosquitoes ( <i>Aedes</i> )
26	1906115 5	HARITI MEHTA	Life cycle of Mosquitoes ( <i>Anopheles</i> )
27	1906115 7	HARKIRAT KAUR	Life cycle of Mosquitoes ( <i>Culex</i> )
28	1906116 0	HARPREET KAUR	Life cycle of Sand fly ( <i>Phlebotomus minutus</i> )
29	1906116 1	HARSHITA	Life cycle of House fly ( <i>Musca domestica</i> )
30	1906116 4	HEMODA NINGOMBAM	Life cycle of Horse fly ( <i>Tabanus striatus</i> )
31	1906116 5	IRANSHU MANGLA	Life cycle of Blow fly ( <i>Calliphora erythrocephala</i> )
32	1906116 8	ISHA RAIKHY	Life cycle of Warble fly ( <i>Hypoderma lineatum</i> )
33	1906117 0	ISHITA	Life cycle of Poultry louse ( <i>Menopon gallinae</i> )
34	1906117 6	JIGMET ANGMO	Life cycle of Sucking louse ( <i>Haematopinus surysternus</i> )
35	1906117 7	JIGMET ANGMO	Life cycle of Fleas ( <i>Xenopsylla cheopis</i> )
36	1906117 8	JIGMET LEGZES LHAMO	Life cycle of Sugarcane leaf hopper ( <i>Pyrilla perpusila</i> )
37	1906118 1	KAJAL	Life cycle of Sugarcane top borer ( <i>Scirpophaga nivella</i> )
38	1906118 2	KASAK SHAUNIK	Life cycle of Sugarcane stem borer ( <i>Chilothea infuscatellus</i> )
39	1906118 6	KHUSHIE	Life cycle of Pink bollworm ( <i>Pectinophora gossypiella</i> )
40	1906119 0	KIRPAL KAUR	Life cycle of Red cotton bug ( <i>Dysdercus inghulatus</i> )
41	1906120 4	MAHIMA	Life cycle of Cotton grey weevil ( <i>Myliocerus maculosus</i> )
42	1906120 7	MALIKA SETHI	Life cycle of Surface grasshopper ( <i>Chrotogonus trachypterus</i> )
43	1906121 3	MANSI DEVI	Life cycle of Cotton jassid ( <i>Empoasca devastans</i> )
44	1906121 6	MARVI GUPTA	Life cycle of Rice Gundhy Bug ( <i>Leptocoris varicornis</i> )
45	1906121 7	MAUSAM KUMARI	Life cycle of Rice grasshopper ( <i>Hieroglyphus banian</i> )
46	1906122 0	MEGHA VERMA	Life cycle of Mosquitoes ( <i>Aedes</i> )
47	1906123 1	MUSKAN BISHT	Life cycle of Mosquitoes ( <i>Anopheles</i> )
48	1906124 3	NEELAM RANI	Life cycle of Mosquitoes ( <i>Culex</i> )
49	1906124 5	NEHA	Life cycle of Sand fly ( <i>Phlebotomus minutus</i> )

UP Shah



S0	1906124 7	NIDHI	Life cycle of House fly ( <i>Musca domestica</i> )
S1	1906124 8	NIDHI	Life cycle of Horse fly ( <i>Tabanus striatus</i> )
S2	1906124 9	NIKITA KUKRETI	Life cycle of Blow fly ( <i>Calliphora erythrocephala</i> )

*Alpna*

Head Dept. of Zoology  
PGCG-11, Chandigarh

*Manpreet*

Principal  
Post Graduate Govt. College for Girls  
Sector 11, Chandigarh

# **SYLLABUS**

**PANJAB UNIVERSITY CHANDIGARH- 160014 (INDIA)**

(Esttd. under the Panjab University Act VII of 1947 nacted by the Govt. of India)



**FACULTY OF SCIENCE SYLLABI FOR  
M. Sc. INFORMATION TECHNOLOGY  
(SEMESTER SYSTEM)**

**EXAMINATIONS 2020- 2021**

--:O:--

PANJAB UNIVERSITY, CHANDIGARH

Outlines of Tests, Syllabi and Courses of Reading for M. Sc. Information Technology (Two Year Degree Programme) for Session 2020- 2021.

<b>FIRST YEAR</b>					
<b>FIRST SEMESTER</b>					
<b>Paper Code</b>	<b>Paper Name</b>	<b>Theory &amp; Practical Lectures</b>	<b>Univ. Exam. Marks</b>	<b>Int. Exam. Marks</b>	<b>Exam. Hours</b>
MS 66	Linux Administration and Programming	6	80	20	3
MS-61	Software Engineering	6	80	20	3
MS-62	Computer Algorithms	6	80	20	3
MS-42	Operating System Concepts	6	80	20	3
MS-63	Minor Project Based on 66	6	80	20	3
MS-64	Minor Project Based on 62	6	80	20	3
<b>SECOND SEMESTER</b>					
MS 45	Advance Java and Network Programming	6	80	20	3
MS-65	E- Commerce and Emerging Trends	6	80	20	3
MS-60	Advanced Database System and MySQL	6	80	20	3
MS-67	Artificial Intelligence	6	80	20	3
MS-27	SEMINAR	2	-	50	
MS-56	Minor Project Based on MS-45& MS-60	6	80	20	3
MS 68	Minor Project Based on MS 67	6	80	20	3
<b>SECOND YEAR</b>					
<b>THIRD SEMESTER</b>					
MS-32	.NET Framework and C#	6	80	20	3
MS-69	Theory of Computation	6	80	50	3
MS 39	Computer Graphics	6	80	20	3
MS-14	Systems Approach to Management and Optimization Techniques	6	80	20	3
MS-18	SEMINAR	2	-	50	
MS-33	Minor Project Based on MS-32	6	80	20	3
MS-59	Minor Project Based on MS- 39	6	80	20	3
<b>FOURTH SEMESTER</b>					
MS-21	<b>Major Project</b>		<b>320</b>	<b>80</b>	

The project period will be of 6 months duration.

The project will involve development of application/system software in industrial/ commercial/ scientific environment

**PANJAB UNIVERSITY, CHANDIGARH**

**OUTLINES OF TESTS, SYLLABI AND**

**COURSES OF READING FOR M. Sc. BOTANY (TWO  
YEARS' COURSE) SEMESTER SYSTEM**

**1<sup>ST</sup> TO 4<sup>TH</sup> SEMESTERS**

**EXAMINATIONS of 2020-21**

# PANJAB UNIVERSITY, CHANDIGARH

## OUTLINES OF TESTS, SYLLABI AND COURSES OF READING FOR M. Sc. BOTANY (TWO- YEAR COURSE ) SEMESTER SYSTEM EXAMINATIONS of 2020-21 & 2021-22

### FIRST SEMESTER

PAPER	SUBJECT	THEORY Max. Marks		PRACTICAL Max. Marks
I	- Phycology	75	(60A+ 15 HT* )	25 (20+5HT*)
II	- Bryology	75	(60A+ 15 HT *)	25 (20+5HT*)
III	- Mycology and Microbiology	75	(60A+ 15 HT*)	25 (20+5HT*)
IV	- A) Computer Applications & Biostatistics B) Lab. Techniques	75	(60A+ 15 HT* )	25 (20+5HT*)
V-	Anatomy of Angiosperms	75	(60A+ 15 HT *)	25 (20+5HT*)
Total Marks		375		125
GRAND TOTAL OF MARKS : 375+ 125 = 500				

### SECOND SEMESTER

PAPER	SUBJECT	THEORY Max. Marks		PRACTICAL Max. Marks
VI -	Pteridophytes	75	(60A+ 15 HT )	25 (20+5HT*)
VII -	Gymnosperms	75	(60A+ 15 HT )	25 (20+5HT*)
VIII -	Angiosperm Morphology, Taxonomy and Phylogeny	75	(60A+ 15 HT )	25 (20+5HT*)
IX -	Reproductive Biology of Angiosperms	75	(60A+ 15 HT )	25 (20+5HT*)
X -	Plant Pathology	75	(60A+ 15 HT )	25 (20+5HT*)
Total Marks		375		125
GRAND TOTAL OF MARKS : 375+ 125 = 500				

**TEACHING HOURS :THEORY** : 19 Hours per week



## SECOND YEAR

### 3<sup>rd</sup> and 4<sup>th</sup> SEMESTERS

#### THIRD SEMESTER

PAPER	SUBJECT	THEORY Max. Marks	PRACTICAL Max. Marks
XI	- Molecular Biology	75 (60A+ 15 HT* )	25 (20+5HT*)
XII	- Plant Physiology	75 (60A+ 15 HT* )	25 (20+5HT*)
XIII	- Biotechnology	75 (60A+ 15 HT* )	25 (20+5HT*)
XIV	- Cytogenetics	75 (60A+ 15 HT* )	25 (20+5HT*)
XV	- Ecology and Environment	75 (60A + 15 HT*)	25 (20+5HT*)
Total Marks		375	125
GRAND TOTAL OF MARKS: 375 + 125 =			500

TEACHING HOURS: THEORY: 18 Hours per week

#### FOURTH SEMESTER

PAPER	SUBJECT	THEORY Max. Marks	PRACTICAL Max. Marks
XVI	- Plant Biochemistry	75 (60A+ 15 HT* )	25 (20+5HT*)
XVII	- Forestry	75 (60A+ 15 HT* )	25 (20+5HT*)
XVIII	- Genetics and Plant Breeding	75 (60A+ 15 HT* )	25 (20+5HT*)
XIX	- Plant Resource, Utilization and Conservation	75 (60A+ 15 HT* )	25 (20+5HT*)
XX - A)	Research Project/Field Study Report	---	60
	B) Seminar	---	40
Total Marks		300	200
GRAND TOTAL OF MARKS: 300 + 200 =			500

TEACHING HOURS: THEORY : 18 Hours per week

PRACTICAL: 16 Hours per week for a group of 10 students

**PANJAB UNIVERSITY CHANDIGARH- 160 014 (INDIA)**

(Estd. under the Panjab University Act VII of 1947-enacted by the Govt. of India)

**FACULTY OF SCIENCESYLLABI**

**FOR**

**M.Sc. (TWO YEAR COURSE) PHYSICS**

**(Semester System)**

**EXAMINATIONS 2021-22**

OUTLINES OF SYLLABI AND COURSES OF READING FOR M.Sc. (TWO YEAR COURSE) IN PHYSICS (1 to 4 SEMESTER) FOR THE EXAMINATION 2021-22

st

**M.Sc I Semester**

**MAX MARKS (TOTAL = 500)**

	Teaching hours per week	Marks	Credits
<b>PHY 8011 Mathematical Physics I</b>	<b>4</b>	<b>15+60 = 75</b>	<b>3</b>
<b>PHY 8012 Classical Mechanics</b>	<b>4</b>	<b>20+80 =100</b>	<b>4</b>
<b>PHY 8013 Quantum Mechanics I</b>	<b>4</b>	<b>20+80 =100</b>	<b>4</b>
<b>PHY 8014 Electronics I</b>	<b>4</b>	<b>15+60 =75</b>	<b>3</b>
<b>PHY 8015 Physics Laboratory I</b>	<b>9</b>	<b>100</b>	<b>4</b>
<b>PHY 8016 Computational Physics I</b>	<b>4</b>	<b>50</b>	<b>2</b>

**M.Sc 2nd Semester**

**MAX MARKS (TOTAL= 500)**

<b>PHY 8021 Mathematical Physics II</b>	<b>4</b>	<b>15+60 = 75</b>	<b>3</b>
<b>PHY 8022 Statistical Mechanics</b>	<b>4</b>	<b>20+80 =100</b>	<b>4</b>
<b>PHY 8023 Classical Electrodynamics I</b>	<b>4</b>	<b>20+80 =100</b>	<b>4</b>
<b>PHY 8024 Electronics II</b>	<b>4</b>	<b>15+60 =75</b>	<b>3</b>
<b>PHY 8025 Physics Laboratory II</b>	<b>9</b>	<b>100</b>	<b>4</b>
<b>PHY 8026 Computational Physics II</b>	<b>4</b>	<b>50</b>	<b>2</b>

**M.Sc 3      Semester** **MAX MARKS (TOTAL=500)**

	Teaching hours per week	Marks	Credits
PHY 8031 Nuclear Physics I	4	15+60=75	3
PHY 8032 Particle Physics I	4	15+60=75	3
PHY 8033 Condensed Matter Physics I	4	15+60 = 75	3
PHY 8034 Classical Electrodynamics II	4	15+60 = 75	3
PHY 8035 Quantum Mechanics II	4	15+60=75	3
PHY 8036 Physics Laboratory III & Industrial visit	9	125	5

**M.Sc 4      Semester** **MAX MARKS (TOTAL=500)**

	Teaching hours per week	Marks	Credits
PHY 8041 Experimental Techniques in Physics	4	20+80=100	4
PHY 8042 Atomic and Molecular Physics	4	15+60=75	3
PHY 8043 Physics Laboratory IV & Project work	9	125	5
Special Paper (Any two of the following)			
PHY 8044 Nuclear Physics II	4	20+80=100	4
PHY 8045 Particle Physics II	4	20+80=100	4
PHY 8046 Condensed Matter Physics II	4	20+80=100	4

# **PANJAB UNIVERSITY, CHANDIGARH-160014 (INDIA)**

(Estd. under the Panjab University Act VII of 1947—enacted by the Govt. of India)



**FACULTY OF ARTS**

## **SYLLABI**

*FOR*

**M.A. PSYCHOLOGY (SEMESTER SYSTEM)  
EXAMINATIONS, 2021-2022**

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**APPLICABILITY OF REGULATIONS FOR THE TIME  
BEING IN FORCE**

Notwithstanding the integrated nature of a course spread over more than one academic year, the regulations in force at the time a student joins a course shall hold good only for the examinations held during or at the end of the academic year. Nothing in these regulations shall be deemed to debar the University from amending the regulations subsequently and the amended regulations, if any, shall apply to all the students whether old or new.

Note:

A candidate for M.A. examination shall offer Psychology or Sociology or Statistics or Public Administration only if he/she has completed and passed the prescribed courses in an affiliated college or the Department concerned of this University.

# GUIDELINES FOR CONTINUOUS INTERNAL ASSESSMENT (20%) FOR REGULAR

STUDENTS OF POST-GRADUATE COURSES in M.A. Psychology (Semester System)

*(Effective from the First Year Admissions for the Academic Session 2009-2010)*

1. The Syndicate has approved the following guidelines, mode of testing and evaluation including Continuous Internal Assessment of students:
  - (i) Terminal Evaluation : 80%
  - (ii) Continuous Assessment : 20%
  - (iii) Continuous Assessment may include written assignment, snap tests, participation in discussions in the class, term papers, attendance etc.
  - (iv) In order to incorporate an element of Continuous Internal Assessment of students, the Colleges/Departments will conduct **one** written test as qualified below:
    - (a) Written Test : 25 (reduced to 5)
    - (b) Snap Test : 25 (reduced to 5)
    - (c) Participation in Class Discussion : 15 (reduced to 3)
    - (d) Term Paper : 25 (reduced to 5)
    - (e) Attendance : 10 (reduced to 2)

**Total: 100 reduced to 20**

2. Weightage of 2 marks for attendance component out of 20 marks for Continuous Assessment shall be available only to those students who attend 75% and more of classroom lectures/seminars/workshops. The break-up of marks for **attendance component** for theory papers shall be as under :

*Attendance Component*

*Mark/s for Theory Papers*

- |                              |   |   |
|------------------------------|---|---|
| (a) 75 % and above upto 85 % | : | 1 |
| (b) Above 85 %               | : | 2 |

3. It shall **not be compulsory** to pass in Continuous Internal Assessment. Thus, whatever marks are secured by a student out of 20% marks, will be carried forward and added to his/her score out of 80 %, i.e. the remaining marks allocated to the particular subject and, thus, he/she shall have to secure pass marks both in the University examinations as well as total of Internal Continuous Assessment and University examinations.
4. Continuous Internal Assessment awards from the affiliated Colleges/Departments must be sent to the Controller of Examinations, by name, **two weeks before** the commencement of the particular examination on the *proforma* obtainable from the Examination Branch.

**SCHEME OF EXAMINATION FOR M.A. PSYCHOLOGY (SEMESTER  
SYSTEM) FOR THE EXAMINATION OF 2020-  
2021**

**SEMESTER-I**

		<i>Theory</i>	<i>Internal Assessment</i>	<i>Total</i>
Paper-I :	Theories and Systems of Psychology-I	80	20	100
Paper-II :	Social Psychology-I	80	20	100
Paper-III:	Experimental and Cognitive Psychology-I	80	20	100
Paper-IV:	Research Methodology and Statistics-I	80	20	100
Paper-V :	Practicum-I	40	10	50

**SEMESTER-II**

Paper-I :	Theories and Systems of Psychology-II	80	20	100
Paper-II :	Social Psychology-II	80	20	100
Paper-III:	Experimental and Cognitive Psychology-II	80	20	100
Paper-IV:	Research Methodology- and Statistics-II	80	20	100
Paper-V :	Practicum-II	40	10	50

## Guidelines for Continuous Internal Assessment (20%) for Regular Students of Post-Graduate Courses (Semester System)

(Effective from the admissions for the Academic Session 2009-2010)

The Syndicate has approved the following guidelines, mode of testing and evaluation including Continuous Internal assessment of students:

- i) Terminals evaluation : 80%
- ii) Continuous Assessment : 20%
- iii) Continuous Assessment may include written assignment, snap tests, participation in discussions in the class, term papers, attendance etc.

Continuous Internal Assessment: 20 marks

1. Two written tests 20 marks each  
(reduced to 5 marks each)
2. Project work 10 marks  
(5 marks Data Collection, 5 marks Write up)
3. It shall **not be compulsory** to pass in Continuous Internal Assessment. Thus, whatever marks are secured by a student out of 20% marks, will be carried forward and added to his/her score out of 80%, i.e. the remaining marks allocated to the particular subject and, thus, he/she shall have to secure pass marks both in the University examinations as well as total of Internal Continuous Assessment and University examinations.
4. Continuous Internal Assessment awards from the affiliated Colleges/Departments must be sent to the C.O.E., by name, **two weeks** before the commencement of the particular examination on the proforma obtainable from the examination branch.

### Special Note:

- i) The theory question paper will be of 80 marks and 20 marks will be for internal assessment.
- ii) For private candidates, who have not been assessed earlier for internal assessment, the marks secured by them in theory paper will be increased proportionately to maximum marks of the paper in lieu of internal assessment.
- iii) In the case of Post Graduate Courses in the Faculties of Arts, Science, Languages, Education, Design and Fine Arts, and Business Management and Commerce (falling under the purview of Academic Council), where such a provision of Internal Assessment/Continuous Assessment already exists, the same will continue as before.
- iv) The marks obtained by a candidate in Continuous Internal Assessment in Post graduate Classes will be shown separately in the Detailed Marks Card (D.M.C.).



PANJAB UNIVERSITY, CHANDIGARH-160014 (INDIA)  
(Estd. under the Panjab University Act VII of 1947—enacted by the Govt. of India)

FACULTY OF BUSINESS MANAGEMENT & COMMERCE

**SYLLABI**

*FOR*

**M.COM. [SEMESTER SYSTEM]  
EXAMINATIONS, 2021-22**

**(For Regular College/University/USOL Students)**



## SCHEME OF EXAMINATION

### SEMESTER-I

<b>Paper 1</b>	<b>M.C.101</b>	MANAGERIAL ECONOMICS	100 Marks
<b>Paper 2</b>	<b>M.C.102</b>	QUANTITATIVE METHODS FOR BUSINESS	100 Marks
<b>Paper 3</b>	<b>M.C.103</b>	MODERN ACCOUNTING THEORY & REPORTING PRACTICES	100 Marks
<b>Paper 4</b>	<b>M.C.104</b>	ORGANISATION THEORY AND BEHAVIOUR	100 Marks
<b>Paper 5</b>	<b>M.C.105</b>	MARKETING MANAGEMENT	100 Marks
<b>Paper 6</b>	<b>M.C.106</b>	MANAGEMENT INFORMATION SYSTEM	100 Marks
<b>Paper 7</b>	<b>M.C.107</b>	WORKSHOP ON IT APPLICATIONS IN COMMERCE (For Regular Students Only)	100 Marks
	<b>M.C.107 A</b>	IT APPLICATIONS IN COMMERCE ( For USOL Students Only)	100 Marks
Total			<u>700 Marks</u>

### SEMESTER-II

<b>Paper 1</b>	<b>M.C.201</b>	BUSINESS ENVIRONMENT	100 Marks
<b>Paper 2</b>	<b>M.C.202</b>	RESEARCH METHODOLOGY IN COMMERCE	100 Marks
<b>Paper 3</b>	<b>M.C.203</b>	FINANCIAL MANAGEMENT AND POLICY	100 Marks
<b>Paper 4</b>	<b>M.C.204</b>	PRODUCTION AND MATERIALS MANAGEMENT	100 Marks
<b>Paper 5</b>	<b>M.C.205</b>	OPERATIONS RESEARCH	100 Marks
<b>Paper 6</b>	<b>M.C.206</b>	BUSINESS POLICY & STRATEGIC MANAGEMENT	100 Marks
<b>Paper 7</b>	<b>M.C.207</b>	SUMMER TRAINING REPORT AND VIVA VOCE (For Regular College Students)	100 Marks
	<b>M.C.207 A</b>	ENTREPRENEURSHIP DEVELOPMENT AND PROJECT MANAGEMENT (For USOL Students Only)	100 Marks
		OR	
	<b>M.C.207 B</b>	FINANCIAL SERVICES (For USOL Students Only)	100 Marks
Total			700Marks

## **Paper 7: MC. 207- SUMMER TRAINING REPORT AND VIVA VOCE**

**(For Regular Students Only)**

After the Completion of Second Semester Examination the students will go on 6-8 Weeks summer training in various Industrial undertakings, banking and financial services institutions, and Retail Sector organizations, undertake a project there to study a particular problem and file three copies of summer training report within 15 days completion of the training. The student has to file a certificate of completion of training issued by training organization. A VIVA-VOCE Examination will be conducted by the External examiner appointed by the University on the problems undertaken in the summer training report. Principal of the College/Chairperson of the Department must appoint one internal supervisor for the guidance of the student regarding the Summer Training Project. The List of the internal supervisors so appointed must be communicated to the Controller of examination within 10 days from the date of appointment. The Internal supervisor will also be acting as Internal Examiner at the time of Conduct of VIVA-VOCE and sit with External Examiner.

<https://pu.ac.in/includes/syllabus/2017/20170905103952-m.com2017-18.pdf?202212072711>

**PANJABUNIVERSITY CHANDIGARH- 160 014 (INDIA)**

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India)



**FACULTY OF SCIENCE**

**SYLLABI FOR**

**POSTGRADUATE DIPLOMA**

**IN**

**COMPUTER APPLICATIONS**

**FOR**

**EXAMINATIONS 2020-21**  
**(SEMESTER SYSTEM)**

**--:O:-**

Outline of the Syllabi and Courses for Post Graduate Diploma in Computer Applications for Examination (Semester System).

**FIRST YEAR (SEMESTER –I)**

Paper Code	Paper Name	Lecture	Tutorial	Practicals/Weeks	Exam. Marks	Int.Ass. Marks	Total Marks	Exam Hours
PGD-1101	Computer Fundamentals	5	1	0	60	15	75	3
PGD-1102	Computer Programming using C	5	1	0	60	15	75	3
PGD-1103	DataBase Management System	5	1	0	60	15	75	3
PGD-1104	Data Communications and Networks	5	1	0	60	15	75	3
PGD-PR-1105	Lab1 (Based on PGD-1101 & PGD-1102)	0	0	9	60	15	75	3
PGD-PR-1106	Lab2 (Based on PGD-1103)	0	0	9	60	15	75	3
<b>TOTAL PERIODS =42</b>					<b>TOTAL MARKS = 450</b>			

**FIRST YEAR (SEMESTER –II)**

Paper Code	Paper Name	Lecture	Tutorial	Practicals/weeks	Exam. Marks	Int.Ass. Marks	Total Marks	Exam Hours
PGD-2101	Object Oriented Concepts Using JAVA	5	1	0	60	15	75	3
PGD-2102	Web Technologies	5	1	0	60	15	75	3
PGD-2103	Software Engineering	5	1	0	60	15	75	3
PGD-2104	Computer Based Accounting	5	1	0	60	15	75	3
PGD-PR-2105	Lab3 (Practical based on PGD-2101)	0	0	9	60	15	75	3
PGD-PR-2106	Lab4 (Practical based on PGD-2102)	0	0	9	60	15	75	3
PGD-2107	<b>Project Work :</b> Project will involve Development of Business Application / Web Site	0	0	6	0	--	100	-
<b>TOTAL PERIODS =48</b>					<b>TOTAL MARKS = 550</b>			

**Paper Title: Project Work.**

**Paper Code: PGD-2107      Max. Marks: 100**

Major Project on any database application using any database development tool is to be developed/ Development of a Web Site using Database connectivity



PANJAB UNIVERSITY, CHANDIGARH-160014 (INDIA)

(Estd. under the Panjab University Act VII of 1947 — enacted by the Govt. of India)

FACULTY OF SCIENCE

SYLLABI

FOR

**BACHELOR OF COMPUTER APPLICATIONS (B.C.A)**

**(SEMESTER SYSTEM)**

**PART-I, II, III**

**FOR**

**2021 – 2022 SESSIONS**

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<b>Bachelor of Computer Applications Semester – VI</b>										
<b>Paper Code</b>	<b>Title</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>Total</b>	<b>Int</b>	<b>Ext</b>	<b>Total</b>	<b>Exam. Duration</b>	<b>Credits</b>
BCA-16-601	E-Commerce	6	-	-	6	10	65	75	3 Hrs	3
BCA-16-602	Application Development using VB.Net	6	-	-	6	10	65	75	3 Hrs	3
BCA-16-603	Computer Graphics and Multimedia Applications	6	-	-	6	10	65	75	3 Hrs	3
BCA-16-604	Lab based on BCA-16-603	-	-	6	6	-	50	50	4 Hrs	2
BCA-16-605	Major Project and Seminar	-	-	12	12	10	115	125		5
	<b>Total</b>	<b>18</b>	<b>-</b>	<b>18</b>	<b>36</b>	<b>40</b>	<b>360</b>	<b>400</b>		<b>16</b>

## Application Development using VB.NetBCA-16-602

L	T	P	Cr
6	-	-	3

**External Marks: 65**  
**Internal Marks: 10**

**Time Duration: 3 Hrs.**

Number of Lectures : 60

**Objective:** The course is designed to enable the students to develop applications using event driven programming with VB.net (as front end) and accessing database at back end.

### **Note :**

- The Question Paper will consist of Four Sections.
- Examiner will set total of **NINE** questions comprising **TWO** questions from each Section and **ONE** compulsory question of short answer type covering whole syllabi.
- The students are required to attempt **ONE** question from each Section and the Compulsory question.
- All questions carry equal marks unless specified.

### **UNIT - I**

**Overview of the Visual Studio .NET IDE:** Introduction to .NET Framework and the Common Language Runtime, Introduction to Visual studio.NET IDE: Menu Bar and ToolBar, Solution Explorer, Toolbox, Using different controls of Toolbox and their commonly used properties and methods: TextBox, Label, Check Box, Radio Button, Button, Frame, List Box, Combo Box, Picture, Image, Shape, Drive, File, directory related controls, Introduction to Menus

### **UNIT - II**

**Basics of VB.Net:** Constants, Variables, data types, assignment operator, Operators: Arithmetic, Relational and logical operators, Assignment operators, Control structures: If, if/then/else selection structures, Select case Multiple-selection structure, While, do while, do until, For/Next repetition structure

**Procedures:** Introduction, sub Procedures, function procedures, event procedures, commonly used Form events, msgBox function, InputBox function.

**Arrays and Strings:** declaring and allocating Arrays, Using Strings and String functions: len, right, left, ucase, lcase, ltrim, trim;

**Control Arrays:** Introduction, creating and using Control Arrays

### UNIT - III

**Writing ASP .NET applications and Deploying ASP .NET Applications:** Introduction to ASP.NET, Difference between ASP and ASP.NET, Understanding Web Forms, Using Validation Controls :

RequiredFieldValidator, RangeValidator, CompareValidator, RegularExpressionValidator, CustomValidator, ValidationSummary; , Managing State in ASP.NET Web Applications using Session object, Cookie and Query String ,Creating ASP.NET application, Deploying ASP.NET Applications with Windows Installer, Introduction to Web Services.

#### UNIT - IV

**Accessing Data with ADO.NET:** Understanding ADO.net, ADO.NET Object model: Connected model and Disconnected model, architecture, components, Understanding Provider classes, using Data Reader to read data from database, Data Adapter and Data sets, Using DataAdapter for Data Navigation and Data Manipulation, connecting to and querying a data source, using Data Grid view control with ADO.NET data sources.

#### Reference Books:

1. Dave Grundgeiger, Programming Visual Basic .NET, O'Reilly Publisher.
2. Michael McMillan, Object Oriented programming using Visual Basic.Net, CambridgeUniversity Press.
3. Cameron Wakefield Henk-Evert Sonder Wei Meng Lee, VB.NET Developer's Guide,Global Knowledge, Syngress Publishing.
4. Evangelos Petroutsos, Mastering Visual Basic .NET, SYBEX Publishing
5. Deitel, Visual Basic.NET How to Program, Pearson Education
6. Lowell Mauer, Teach Yourself more Visual Basic.net in 21 days, SAMS

## **GEOGRAPHY SEMESTER-V**

### **Paper-IX: WORLD REGIONAL GEOGRAPHY- I**

Max. Marks	:	70
Theory	:	60
Internal Assessment	:	10
Time	:	3 Hours

### **Objectives:**

To provide an understanding of the concept of world regions with respect to Land, People, Polity and Economy; the physical and human resource base and their interface with economic development; development problems and prospects.

### **Course Content:**

Study of the following regions of the world in terms of constituent countries: strategic location, salient physical, demographic and economic features, cultural patterns, resource base, economic development, problems, prospects and issues related to Regional Groupings (European Union, North Atlantic Treaty Organization, North American Free Trade Agreement and Commonwealth of Independent States).

#### **UNIT-I**

- (i) Anglo America (20 lectures)

#### **UNIT-II**

- (ii) Latin America (20 lectures)

#### **UNIT-III**

- (iii) Europe (20 lectures)

#### **UNIT-IV**

- (iv) Russia & Commonwealth of Independent States (30 lectures)  
(v) Oceania

### **Note:**

1. Questions will be put on region(s) as a whole and not on individual country. The questions should focus on regional perspective.
2. A map based compulsory question containing 15 short answer type questions shall be set covering the whole syllabus. The students shall attempt any 10 parts in about 30 words each. Each part will carry 2 marks (Total 20 marks).
3. The whole syllabus will be divided into 4 units. Eight questions will be set out of the whole syllabus, 2 from each unit. The students will be required to attempt one question from each unit. Each question

B.A./B.SC.(GENERAL) THIRD YEAR (SEMESTER SYSTEM) 2022 2023 SYLLABUS

will carry 10 marks. (Total 40 marks) These will be in addition to the compulsory question.

4. Special credit will be given to suitable use of maps and diagrams. Use of unmarked stencils and colours will be allowed.
5. Six hours theory classes in a week are compulsory.
6. Internal assessment will be based on (i) class tests, (5marks) (ii) academic activities , seminar, Project , Assignment (3 Marks) and (iii) attendance (2marks).



- (i) Written paper of three hours covering entire syllabus shall be held for students of USOL. 20 marks  
For others it shall be at respective colleges.
- (ii) Practical Record relating to Map Projections and Viva voce on Practical Record relating to Map Projections. 10 marks

## Objective:

- To provide an analytical understanding of use of common map projections.

## Course Content:

### Unit- I

Map Projections:

General introduction , classification of projections, general principles of identification and choice of projections.  
(6 lectures)

### Unit- II

Construction, properties and limitations of following projections

Cylindrical : Simple, Equal area, Mercator's (4 lectures, 6 lab. sessions)

### Unit- III

Construction, properties and limitations of following projections

Conical : One Standard Parallel, Two Standard Parallel , Bonne's, Polyconic and International  
(4 lectures, 6 lab. sessions)

### Unit- IV

Construction, properties and limitations of following projections

Zenithals : Gnomonic, Stereographic, Orthographic, Equidistant and Equal Area (Polar cases only)  
Conventional : Sinusoidal and Molleweide's (normal cases only) (7 lectures, 7 lab. sessions)

1. For the students of USOL there will be an internal assessment of 10 marks in lieu of the viva-voce examination in practical record and field report. The marks obtained by the candidate will be added to the marks awarded by the internal and external examiners evaluating the Practical Record.
2. A fresh practical note book shall be prepared by failed /improvement candidates.
- 7 For Practical classes, the number of students in one group shall not exceed fifteen.
8. There will be 3 hours of teaching per week for this paper.
9. For USOL, reappear/improvement candidate(s) who have not been assessed earlier for Internal Assessment, the question paper(s) in their case shall be of Maximum Marks allotted to the

paper(s) concerned.

**The paper setter must put note 9 in the question paper.**

**GEOGRAPHY  
SEMESTER-VI**

**Paper-XI: WORLD REGIONAL GEOGRAPHY- II**

Max. Marks	:	70
Theory	:	60
Internal Assessment	:	10
Time	:	3 Hours

**Objectives:**

To provide an understanding of the concept of world regions with respect to Land, People, Polity and Economy; the physical and human resource base and their interface with economic development; development problems and prospects.

**Course Content:**

Study of the following regions of the world in terms of constituent countries: strategic location, salient physical, demographic and economic features, cultural patterns, resource base, economic development, problems, prospects and issues related to regional groupings (South Asian Association of Regional Cooperation, Association of South East Asian Nations, Organization of Petroleum Exporting Countries and Organization of African Unity).

**UNIT-I**

- (i) East Asia (20 lectures)

**UNIT-II**

- (ii) South East Asia (iii) South Asia. (30 lectures)

**UNIT-III**

- (iv) Middle East and North Africa (20 lectures)

**UNIT-IV**

- (v) Africa South of Sahara (20 lectures)

**Note:**

1. Questions will be put on region(s) as a whole and not on individual country. The questions should focus on regional perspective.
2. A map based compulsory question containing 15 short answer type questions shall be set covering the whole syllabus. The students shall attempt any 10 parts in about 30 words. Each part will carry 2 marks (Total 20 marks).
3. The whole syllabus will be divided into 4 units. Eight questions will be set out of the whole syllabus, 2 from each unit. The students will be required to attempt one question from each unit. Each question will carry 10 marks. (Total 40 marks) These will be in addition to the compulsory question.
4. Special credit will be given to suitable use of maps and diagrams. Use of unmarked stencils and colours will be allowed.
5. Six hours theory classes in a week are compulsory.
6. Internal assessment will be based on (i) class tests, (5 marks) (ii) academic activities, seminar, Project, Assignment (3 marks) and (iii) attendance (2 marks).
7. For USOL, reappear/improvement candidate(s) who have not been assessed earlier for Internal Assessment, the question paper(s) in their case shall be of Maximum Marks allotted to the paper(s) concerned. **(The paper setter must put note 7 in the question paper.)**

## Paper - XII: FIELD SURVEY BASED REPORT

**Max. Marks: 30**

Time : 3 hours

- To acquaint the students with the importance of field work as one of the methodologies in geography.
- To familiarise the students about pre-field work and post-field work i.e. data processing and analysis and writing of field work report.

Distribution of Marks

- i) Viva-Voce : 10 Marks                      ii) Field Report: 20 Marks

**Fieldwork (Theory):**

(i) Role of fieldwork in Geography.

(ii) Scale of study and fieldwork methodology.

(iii) Methods of collecting primary data : Observation, Interview and Questionnaire and Measurement.

(iv) Methods of field study of: a farm, a village, and a town. (20 lectures)

**Note:** The teachers should familiarize the students in the class before collection of primary data for preparation of field work.

**Fieldwork (Practical):**

A field report of minimum 20 pages will be prepared based on primary data

on problems such as (a) local market survey, (b) service area of school/ or hospital; (c) traffic flow, and (d) socio-economic characteristics of student's village/ mohalla/ sector.

(25 lab. Sessions)

## **PANJABUNIVERSITY**

Outlines of tests, syllabi and courses of reading in the subject of Functional English in Semester System  
(Vocational Undergraduate Level examination (2019-2020))

### **VOCATIONAL COURSES IN FUNCTIONAL ENGLISH AT THE UNDERGRADUATE LEVEL**

#### **Revised syllabus**

1. **Subject Title** : Functional English (15 weeks/semester)

2. **Objectives:**

Optional course in functional English is a job-oriented course. Its main objective is to motivate fresh graduates to seek self appointment as well as to inculcate in them the spirit of entrepreneurship. The course is intended to break new grounds in teaching of purposeful Functional English thereby offering more scope in comparison to the existing Optional English courses at the undergraduate level. It aims at training enterprising youngsters in communication at various levels by providing proficiency in Speech Skills, Oral Skills, Writing Skills and Study skills. Additionally, being broad-based, it aims to make youngsters self-sufficient, self-reliant and confident so that they can opt for their own enterprise or take up employment in new upcoming areas.

3. **Job Potentials:**

A. Establish Private Enterprise like:

- a) Tutorial Centers
- b) Consultancy Services
- c) Human Resource centers for Service Industry
- d) Video Filming centers
- e) Small Radio Programme Production Centers
- f) Print and Graphic Art Centers

B. Seek Employment as:

- a) Interviewer with TV/Radio/Newspaper
- b) News Reader/Scriptwriter with TV/Radio/Newspaper
- c) Compere with TV/Radio
- d) Commentator with TV/Radio
- e) Announcer with TV/Radio
- f) Documentary Narrator/script writer with TV/Radio
- g) Feature Writer with Newspaper
- h) Receptionist (with Govt. such as Public Relations Dept. or with Private Sector such as Tourism Industry)
- i) Secretary (with similar to (h)).
- j) Desk officer/Office Assistant
- k) Sales Representatives (with Electrical/Electronic Goods companies and similar set-ups)

4. Permissible combination of subjects including prerequisite of admissions:

Admission pre-requisite:	Students should have studied English as one of the subjects at the plus 2 level. Preference should be given to English medium students.
Combination of Subjects:	Of the other two subjects, one should necessarily be English and the other any subject.

5. Syllabus components:

**B.A.Part-I**

Semester I	:	Speech Skills
Semester II	:	Writing Communication Skills and Study Skills

**B.A.Part-II**

Semester III	:	Radio journalism +Broadcast Presentation.
Semester IV	:	T.V Journalism:

**B.A.Part-III**

Semester V	:	Print Journalism
		Print journalism I +Print journalism-II
Semester VI	:	Office communication for business:
		Office communication for the Business-I +Office Communication for Business-II.

**Unit Cost for 30 students** :

Books/journals	:	Rs 10,000/-(Rs. Ten Thousand)
Equipment	:	Language Laboratory [Rs. 10,00,000/- (Rs. Ten Lakh)for Studio, Video, TV, VCP etc.]
Building:		3 Lecture Rooms.
		1 Laboratory
		1 Library



## FUNCTIONAL ENGLISH

### B.A.Part I

Semester I 12 periods per week including theory and Practical

Semester II 12 periods per week including theory and Practical

Paper	Subject	Marks
Communication Skills:		
Semester I	Speech Skills	45 (Theory)
	Oral Communication Skills	45 (Practical)
Writing Communication Skills:		
Semester II	Writing Communication Skills and Study Skills	90 (THEORY)
	Total Marks	180

### B.A.Part II

Semester III 12 periods per week including theory and Practical

Semester IV 12 periods per week including theory and Practical

Paper	Subject	Marks
Radio Journalism:		
Semester III	Radio Journalism	45 (Theory)
	Broadcast Presentation	45 (Practical)
T.V.Journalism:		
Semester IV	T.V.Journalism I	45(Theory)
	T.V.Journalism II	45(Theory)
	Total Marks	180

### FUNCTIONAL ENGLISHB.A.Part

Semester V 12 periods per week including theory and Practical

Semester VI 12 periods per week including theory and Practical

Paper	Subject	Marks
Print Journalism:		
Semester V	Print Journalism I	70 (Theory)
	Print Journalism II	20 (Viva)
Office Communication for Business:		
Semester VI	Office Communication for Business 1 Office Communication for Business II	45 (Practical) 25 Viva 20 Training
On the job training : at one of the places given below	Total Marks	180

Visit to: Radio Station, Tutorial Academy., Any Service Industry Centre, T.V.Station,Newspaper

## Course Contents:

Unit I	To be tested in Theory- phonetic symbols for Consonants, Vowels and Diphthongs and their place and name of Articulation.
Unit II	the Syllable: Definition, Types and Division of Syllabus
Unit III	Weak forms and constructions
Unit IV	Word stress
Unit V	Sentence Stress: Pause and Juncture
Unit VI	Intonation: Patterns of Intonation in simple sentence types

## Mode of Examination for Theory:

Unit I	Greeting/Introduction/Leave taking
Unit II	Making /Granting /Refusing requests
Unit III	Making inquiries/ Giving/Withholding information; Giving directions/withholding information.
Unit IV	Describing people, processes, procedures, objects; Narrating events
Unit V	Extending/Accepting/Declining Invitation
Unit VI	Making complaints and suggestions/Apologizing/Offering Excuses
Unit VII	Negotiating;Persuading people/ Expressing Dissent and Caution.
Unit VIII	Offering Emotional Support/ Motivating People/ Expressing Condolences
Unit IX	Making Announcements/Public Addressing

## Suggestion for teaching:

Emphasis is to be placed on the use of spoken language rather than on theory. Once the learners are familiar with the speech sounds, patterns of stress and intonation, they must be given intensive practice in these areas.

It must be made clear that the model of pronunciation is not strictly RP, learners should follow the dictionary as closely as possible but whenever there are differences between RP and Sound used in Indian English, and these differences can be accepted if they do not interfere with intelligibly and clarity of speech. (Teachers may not insist on a perfect articulation of RP sounds).

Use one of the Modes: Face to face or Telephone or interaction with public for each Unit

Use Styles:  
Informal and formal for each unit

## SEMESTER II Writing: Communication Skills and Study Skills

**Written: 90**  
**Marks**  
**Int. Assessment:**  
**10 Marks**  
**Total: 100 Marks**

### Objectives:

To enhance learners' ability of communication in the written mode with accuracy and fluency

To train learners in the use of specific formats of written discourse

To introduce learners to the fundamentals of study skills

To familiarize learners with the study skills to collect, classify & retrieve information from different sources and to record and store it

### Course Contents:

### Marks

Unit I	Note making/Précis writing	15
Unit II	Paragraph writing: Types, Formats and structural organization of different types of paragraphs: Informative, Descriptive, Narrative, Argumentative	10
Unit III	Letter writing: Formal and Informal	10
Unit IV	Transcoding information <ul style="list-style-type: none"><li>- Dialogue to Paragraph</li><li>- Paragraph to Dialogue</li><li>- Diagram to Paragraph</li></ul>	15
Unit V	Report writing for newspapers and magazines	10
Unit VI	Consulting <ul style="list-style-type: none"><li>- Dictionaries to find the meanings, spellings, pronunciations and usage of words</li><li>- Thesaurus to find words with similar and opposite meanings</li></ul>	15
Unit VII	Classifying books subject wise and preparing bibliography	5
Unit VIII	Interpreting information presented in charts, graphs and tables	10

## **Suggestions for teaching:**

Unit I: This unit aims at honing the reading skills of the students.

Unit II: This unit aims at helping students develop and organize thoughts and ideas.

Unit III: This is a general course in letter writing. Features of formal and informal letters are to be highlighted with no particular areas in mind.

Unit IV: This unit aims at familiarizing learners with the skills of transferring information from one mode to another and this to prepare them for tasks to be assigned in the areas of office communication for Business and Media only. The basics are to be taught.

Unit V: In this unit, teachers should use authentic material such as press notes, newspapers, magazines, CDs etc. Besides taking care of learners' study skills, the component will indirectly enrich learners' general awareness of current affairs, economic affairs, sport business, politics etc.

### **Reference Material: (To be subscribed by the college)** **Magazines:**

1. Outlook
2. Sports Week
3. India Today
4. Business Today
5. Business India

### **Newspapers:**

1. Pioneer
2. The Times of India
3. The Economic Times
4. Financial Express
5. Asian Age
6. The Hindu
7. The Statesman

# OUTLINE OF TESTS SYLLABI AND COURSES OF READING FOR FUNCTIONAL ENGLISH (SEMESTER SYSTEM) AT THE UNDERGRADUATE LEVEL EXAMINATION 2019-2020

## SEMESTER III

### **Paper : Radio Journalism + Broadcast Presentation:**

- To acquaint learners with the different mechanisms of radio broadcast.
- To train learners in Script writing for different genres of Radio broadcast.
- To help learners build their best voice by acquainting them with the elements of voice and providing training in it.
- To help learners to identify their speech problems and overcome them.
- To sensitize learners to body movements, demeanor and gestures involved in TV presentation.

### **Course Content :**

#### **Unit I: Introduction Broadcasting:**

- The concept of Mass Communication: Its Status & a Brief introduction to its different Mediums (Print, Radio, TV, Films)
- Role of Print as Means of Communication
- Role of radio as a Means of Communication
- Role of TV as Means of Communication
- The concept of Network Societies: The Expansion of radio & TV Network in India (Educational TV, Satellite TV, Doordarshan).

#### **Unit II: Interview:**

- Reporting Speed and Accuracy
- Contacts, Faithful Reporting
- Building Sources-Interviews-‘Foners’

#### **Unit III: News Bulletin:**

- Kinds of Bulletin
- Compilations of Bulletin
- Structural Languages
- News Values: News Selection and Presentation
- Sources of News
- Basic Guidelines for News Writing: Words Economy-Time Frame-Figures,- Devices
- News Writing: Agency copy, radio copy, Edition

#### **Unit IV: Announcements:**

- Possible purposes for announcements (Emergencies-Death of VVIPs, Traffic Blockades, Economic Crises-Weather Chances etc.)
- Announcing for Promos, language and style, creativity within time constraints.
- Art of Voice Modulation for different types of announcement

#### **Unit V: Commentary:**

- Commentary in different situations and for different purposes

- Research, Survey and Studies
- Language and Style

**Unit VI: Comparing:**

- Comparing in different situations and for different purpose
- Role of Wit and Humor in Compering.
- Language and Style

**Unit VII: Concept of Voice Training:**

- Elocution
- Inventory of Voice, Audition Analysis
- Common Problems of Broadcast Voice

**Unit VIII: Training in developing one's Best Voice:**

- The organs of speech and their mechanism
- The Physical Structure
- Breathing Types
- Note Production
- Tone Production

**Unit IX: Training in developing one's Best Speech:**

- Revision of Course Component: Speech Skills
- Word and Discourse Production
- Copy Techniques, marking copy
- Presentation Scripts, Presentation Based on Notes.

**Note:** The last objective and the last mention point under suggestion for teaching to be taken up with Broadcast Journalism TV (1) and (2) in the III year.

**Suggestions for teaching :**

During the course of study, the teachers need to be very resourceful. This has to be done in the form of organization field trips to make learners work in authentic setting and to produce a lot of real materials i.e. scripts, tapes etc. to be used as teaching materials. The teacher's creativity will be in the fore while organizing practical activities for learners.

**Field work:**

Visit to sites of different events by learners is required in order to cover the happenings in their practical work. Visit to the radio Station by learner is desirable to help learners observe presentations to acquire related skills. The teacher needs to give a lot of practical work by making learners participate in Physical exercises, making text, giving oral presentations and facing the camera through simulation.

**Mode of Examinations:**

Written: 45 marks  
 Practical: 45 marks  
 Total 90

(Oral presentation in different situations i.e. banks, airports, inquiry; formal presentation during exams; a broadcaster, voice testing)



## **SEMESTER IV**

**Paper : T.V. Journalism**

**Objectives:** T.V. Journalism 1 & T.V. Journalism 2

- To acquaint learners with the lay-out, equipment and functioning of a T.V. station
- To train learners in scriptwriting for different genres of T.V. Broadcast.
- To sensitize learners to body movements, demeanor and gestures involved in T.V. presentation.
- To provide further practice in previously covered features of broadcast presentation.
- To familiarize learners with different genres of T.V. production with specific training imparted in script writing.
- To continue with all other features of Broadcast presentation.

### **Course Content:**

#### **Unit I: TV station and program Production**

- Pre production: Techniques of Programme presentation and the criteria of selecting technique for presentation.
- Production and the Criteria of selecting Technique for presentation.
- Production: Studio Lay-out, Camera, production Control room, lighting system, Audio - System.
- Post Production : Editing.

#### **Unit II: Interviews**

- Interviews as a Mean of collecting information
- Types of Interviews
- Interviews in relation to purpose, situation interest & taste.
- Writing Questions
- Conducting the Interviews

#### **Unit III: News Bulletin**

- Defining News
- Types of News
- News gathering
- News Processing
- News Writing
- Writing for Voice-Overs
- Editing
- Bulletinizing News

#### **Unit IV: Compering**

- Note taking, Note Making, Referencing, Researching
- As Libbing
- Creating word images pertaining to various sense

#### **Unit V: The Entire Paper B of Second year (Broadcast Representation)**

- Voice Production
- Speech training

- Body language

## **Unit VI: Electronic Media and Job Opportunities**

- Electronic Media : Vital elements in information technology.
- Satellite technology and Job opportunities at the Global Level
- Role of PrasarBharti and Broadcast Authority of India
- Scope of Script Writing skills in the 21<sup>st</sup> century- the Growth and Relevance of English/Regional/National and International level

## **Unit VII: Commentary**

- Definition and Aims
- Components of a Commentary: Education and Research
- Attitude, Language Style
- Delivery

## **Unit VIII: Announcements**

- Formats of Announcing Styles, Purpose, Situations, Time, Age, Pace and Pitch.
- Announcing Programmes
- Announcing Commercials
- Public Service Announcements
- Promos
- Kinds of Spot Productions

## **Unit IX: Documentary**

- Definition and Aims
- Techniques of Writing for documentary
- Components of a documentary
- Language, style and format
- Characteristics of good documentary
- Types of Copies, TV Scripts, Scene-by-scene Scripts, Camera Scripts, Shooting Scripts

## **Unit X: Body Language**

- Gestures/ Moments of Face, Lips, Eyes, Limbs before the Camera
- Aspects of Gait, Dress Sense, Grace and Demeanor

## **Suggestions for teaching :**

1. During the course of study, the teacher needs to be resourceful in order to organize field trips to TV Programmes production centers. The teacher should be able to obtain scripts, tapes, etc. of authentic material to be used in the classroom. This can be recorded with the help of a VCR and can also be transcribed. The teacher must also be able innovative enough to construct activities such as simulation tasks for learners.

2. **Ref. Unit V:** The teacher must provide the students with plenty of opportunities to practice presentation of scripts/notes. This includes making learners participate in physical exercises, making texts, giving oral presentations and facing the cameras through simulation. The college must make provision for students to face the camera and rehearse presentation

## **OUTLINE OF TESTS SYLLABI AND COURSES OF READING FOR FUNCTIONAL ENGLISH (SEMESTER SYSTEM) AT THE UNDERGRADUATE LEVEL EXAMINATION 2019-2020**

### **SEMESTER V**

**Paper :**                **Print Journalism**

**Objectives:**

- To generate awareness among learners of issues deserving reporting in print and to stimulate them to rebuild environment in print.
- To familiarize learners with different aspects of print journalism, its formats, its avenues.
- To enable learners to write news stories from the stage of news gathering to editing to their final presentation.
- To familiarize learner with the lay-out, equipment and functioning of a newspaper/magazine production centre
- To enable learner to acquire the art and skills of feature writing to encourage freelancing among them.
- To generate awareness among learner of the aspects of graphic arts in Print Journalism.

**Course content :**

**Unit I :**                **An introduction to Print Media**

- Print media and communication
- Definition of communication
- Scope of communication : Purpose and its forms

**Unit II:**

**Reporting**

- Act of news gathering
- Sources of information
- News reporters, their organization and their responsibilities.
- Distinguishing factual News Reporting from interpretative and Analytical Reporting.

- Unit III: Investigative Journalism**
- Interview as a instrument of News gathering
  - Types of interviews in Relation to purpose, situation
  - Writing the questions
  - Reporting from interviews- formats, styles and content
- Unit IV: Writing News Stories**
- Structures and formats of a News Story-the content of Inverted Pyramid pattern
  - Essentials of News Writing: the headlines- the leads- the body and conclusion
  - the art and skills of writing for different purposes
- Unit V: Areas in News reporting**
- Prioritizing Issues and Aspects.
  - Reporting on developments vs. reporting on Action
  - Reporting obituaries, Weather, Sports, science, business, Art and culture,Education, Agriculture, fashion, community services, etc.
- Unit VI:Editing
- Need for editing
  - Editing different types of copies- copy reading symbols-style sheet
  - Rewriting mofussil copy
  - Pattern of headlines- headline Vocabulary and Grammatical use of abbreviations
- Unit VII: Packaging stories**
- Designing the Newspaper- types of pages, their status and functions - types of page make-up- tabloid vs. broadsheet,-mechanics of page make-up- functions, contents, and lay-outs of various pages.
- Unit VIII: The Reader**
- The discerning Eye of the News Person
  - Understanding the Reader, the Rights of the Readers, the role of press council ofIndia.
- Unit IX: Feature Writing**
- Defining a feature (a lyric in press)- the crafts of feature writing
  - Distinguishing of a feature from other forms of Newspaper/Magazine writing. Researching before writing Titles and Leads-Packaging & feature and other ingredients, Areas for feature writing (middles, reviews)/ free lancing and feature writing

## **SEMESTER VI: Office Communication for Business**

### **Objectives:**

- To equip learners with language proficiency in Business/work situations particularly in spoken interaction
- To make learners aware of the special features of format and style of informal communication through various modes.
- To equip learners with techniques of written communication in business situations.
- To expand vocabulary and develop reading comprehension of material related to business.

### **Course content:**

#### **Unit I : Mode: Face to Face: Business Contacts**

Interaction in Formal/Informal Situation: Greetings, replying to greetings, introduction of oneself and others.

Welcoming, bidding farewell, appreciating in an interview, talking about oneself, describing one's job, work place, likes and dislikes, future plans, describing one's strength and weakness, abilities and qualifications.

#### **Unit II : Mode: Telephonic Interaction**

Taking messages, making appointments, making enquiries regarding travel bookings, hotel bookings, services, business trading (stocks etc.), making orders, receiving orders, apologizing, complaining, replying to complaints, giving information.

Practice in telephoning techniques such as repeating numbers, spelling out names, giving information clearly, noting messages, etc.

#### **Unit III: Mode: Face to Face Public Address: Dealing with Clients and Customers.**

- Describing products and Services
- Describing Process
- Answering trade enquiries
- Persuading Clients
- Negotiating an Agreement

#### **Unit IV: Mode: Public Address: Presentation Mode : Public Interaction**

Giving options, arguments, justifying, explaining, proposing, dissenting, summing-up, presenting a product (eg. Household appliance) or service (e.g. facilities provided by a hotel) in a clear persuasive manner with the help of illustrative material such as graphs, posters or charts.

## **Unit V: Business Correspondence**

The format of business letters and faxes: Different types of formats, address, opening and closing, subjects, headings, sub-headings, numbering etc.

Scanning letters and faxes for specific information, acquiring familiarity with abbreviations and phrases commonly used in business correspondence. Writing letters of applications with curriculum-vitae /resume letters of invitation, reply to invitation enquiry, reference, arrangements, announcing forthcoming events products, visits, making booking and arrangements for conference, trade fairs etc. complaints and replies of complaints, apologies, thanks,

Writing office memos and notes

## **Unit VI: Business Meetings**

Writing notices, agendas, resolutions, minutes for business meetings, preparing notes for a meeting

## **Unit VII: Business Reports**

- Independent reading of reports business and finance papers, reports on company performance, market survey, project reports, reports of achievements in the world of business by well-known business personalities, comparative progress of various enterprises etc.

- Summarization of main ideas of these reports, using the vocabulary from them and consulting the business English dictionary.

- Basic Report writing: Organizing information, structuring the report.

## **Field Work:**

- Visit to the TV Station by learners for exposure to mechanism of TV Broadcast is desirable.
- Visit to the sites of different events by learners is desirable so as to cover authentic happenings for practical work

**PANJAB UNIVERSITY CHANDIGARH-160014  
(INDIA)**

(Estd. under the Panjab University Act VII of 1947-enacted by the Govt. of India)



**FACULTY OF SCIENCE**

***SYLLABI***

***FOR***

**M.Sc. in Zoology Two Year Course  
(Semester System)  
I<sup>st</sup> to IV<sup>th</sup> Semester**

**EXAMINATIONS 2021-22**



1. Protozoa.
  - a. Permanent stained from the culture of *Amoeba*, *Euglena*, *Paramecium* and *Vorticella*.
  - b. Prepared slides of *Amoeba*, *Trypanosoma*, *Euglena*, *Noctiluca*, *Eimeria*, *Monocystis*, *Paramecium* (binary fission), *Paramecium* (conjugation), *Opalina*, *Vorticella*, *Balantidium*, *Nyctotherus*, Radiolarian oozes and Foraminiferan oozes.
2. Porifera
  - a. Specimens : *Scypha*, *Grantia*, *Spongilla*, *Euplectella*, *Hyalonema*, *Euspongia*
  - b. Prepared slides : Spicules, gemmules, *Sycon* (T.S and L.S) gemmules and spicules
  - c. Study of permanent slides.
3. Coelenterata
  - a. Specimens: *Porpita*, *Velella*, *Physalia*, *Aurelia*, *Metridium*, *Alcyonium*, *Tubipora*, *Zoanthus*, *Madrepora*, *Favia*, *Fungia*, *Gorgonia* and *Pennatulula*.
  - b. Prepared slides : *Hydra* (W.M.), T.S. through regions of testis and ovary, *Obelia* (colony, medusa and polyp), *Sertularia*, *Plumularia*, *Tubularia*, *Bougainvillea*, *Aurelia*, *Pennaria*, *Hydra*, *Obelia*, *Sertularia* and *Plumularia*
  - c. Preparation of permanent slides.
4. Platyhelminthes
  - a. Specimens : *Planaria*, *Dugesia*, *Fasciola*, *Taenia*, and *Echinococcus*.
  - b. Slides : *Fasciola* (miracidium, sporocyst, redia and cercaria), scolex and proglottids of *Taenia* (Mature and gravid L.S. & T.S.).
  - c. Stained preparation of : Amphistome, proglottid of a cestode.
5. Aschelminthes
  - a. Specimens : *Ascaris* (Male and female)
  - b. Slides : *Ascaris* (T.S. of male and female gravid).
6. Project based on general information on animals, selecting at least one representative from each phylum.

#### Books Recommended

1. *Invertebrates* Vols. I, II, III, IV & V by L.H. Hyman, Mcgraw Hill, New York (1940- 51)
2. *Text book of Zoology* by Marshall and Williams (1962).
3. *Invertebrates Structure and function* by E.J.W. Barrington. English Language Book Society & Nelson (1969).
4. *Protozoology* by Kudo, R.R., Books and Periodicals Corp.(India) New Delhi (1986).
5. *Introduction to Animal Parasitology* by J.D. Smyth. Hodder & Stoughton, London (1976).

Pancreas and liver).  
Circulatory system : Evolution of heart & aortic arches in different classes of vertebrates.

**Note :** Nine questions to be set. First question of 15 marks, covering the whole syllabus will be compulsory and will consist of 10 short answer questions of 1½ marks each. For the remaining 8 questions, 4 to be set from each Unit I and II and 2 to be attempted from each Unit. Each question from Units I and II will carry 12½ marks.

#### Practicals based on theory paper II (MZL 6052)

1. Classification upto orders, excepting pisces and Aves, where classification upto subclasses is required, Habits, Habitats, external characters and economic importance (if any) of the following animals:  
Chondrichthyes : *Zygaena, Pristis, Narcine, Trygon, Rhinobatus, Chimaera*  
Actinopterygii : *Polypterus, Acipenser, Lepidosteus, Muraena, Mystus, Catla*

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*Hippocampus, Syngnathus, Exocoetus, Anabas, Diodon, Tetradon, Echeneis and Solea.*  
Dipneusti (Dipnoi) : *Protopterus* (Lung fish)  
Amphibia : *Urosatyphlus, Necturus, Amphiuma, Ambystoma* and its Axolotl larva. *Triton, Salamandra, Hyla, Rhacophorus.*  
  
Reptilia : *Hemidactylus, Calotes, Draco, Varanus, Phrynosoma, Chamaeleon, Typhlops, Python, Eryx, Ptyas, Bungarus, Naja, Hydruis, Vipera, Crocodilus, Gavialis, Chelone and Testudo.*

2. Demonstration of dissection of *Labeo* through video clipping/models/charts :  
Digestive and reproductive systems, Circulatory system : heart, afferent and efferent branchial arteries, Nervous system : cranial nerves and internal ear.
3. Study of the skeleton of *Labeo, Rana* and *Varanus*.
4. Study of histology of different organs of frog through permanent slides.
5. Study of poison apparatus in snakes through charts.
6. Project based on general information on animals selecting atleast one representative from each class/Parental care.

#### Books Recommended

1. *A Text Book of Zoology: Vol II, Vertebrates* by: A. I. Marshall, MacMillan & Co.

populations.

4. Basic statistics, average statistics of dispersion. Measures of central tendency and measures of dispersion.
5. Coefficient of variation, standard error, confidence limits.
6. Probability distribution - binomial, Poisson's and normal.
7. Hypothesis Testing: Hypothesis definition and formulation, tests of statistical significance (Chi-square test, Z-test, F-test, Student's t-test).
8. Analysis of variance - one way ANOVA. Coefficient of correlation; simple & multiple regression.

#### Unit - II

1. Scientific writing & its types - research article, review article, meta-analysis, project report, monograph, dissertation, thesis, research project
2. Online sources for literature review, citation and citation managers
3. Plagiarism - Definition, citing and giving credit to work done by peers,
4. Brief introduction to intellectual property rights, patents & copyrights
5. Publishing research articles and academic books, reputed publishing houses, predatory journals, impact factor, citation index
6. Presenting research work in scientific meetings
7. Research ethics and research misconduct, brief introduction to animal ethics
8. Safety considerations at research workplaces, biosafety

**Note:** Nine questions to be set. First question of 15 marks, covering the whole syllabus will be compulsory and will consist of 10 short answer questions of 1½ marks each. For the remaining 8 questions, 4 to be set from each Unit I and II and 2 to be attempted from each Unit. Each question from Units I and II will carry 12½ marks.

#### Practicals based on Theory Paper - V

1. Calculation of dispersion & measure of central tendency
2. Fitting of Binomial distribution
3. Fitting of Poisson's distribution
4. Tests of statistical significance
5. Using online resources for literature review
6. Using plagiarism checker
7. Field study report: Students will visit the field for study of animals pertaining to protozoa, helminths, insects, fishes, amphibians, reptiles, birds and mammals. The students will also submit a Field Study Report on the fauna of the place visited by them. A panel of 2 examiners will evaluate the field study report.
8. Seminar: All students will prepare a 10 minutes seminar on any research topic of their choice. It will be compulsory for all the students to attend the seminars. Every seminar will be evaluated by a team of two examiners individually and the average of marks awarded by these examiners will be considered as the "Marks obtained".

#### Books Recommended (Select List)

1. Kothari, C. R. & Garg, G. 2019. Research Methodology - Methods and Techniques. New Age International (P) Limited. Pp. 438.
2. Leake, P., Benestad, H. B., & Olsen, B. R. eds. 2007. Research Methodology in the Medical and Biological Sciences.
3. Marascyk, G., DeMotteo, D., Festinger, D. 2005. Essentials of Research Design and Methodology. John Wiley & Sons Inc.
4. Chap, T. L., & Eberly, L. E. 2016. Introductory Biostatistics. Wiley.
5. Gurramani, C. P. 2015. An Introduction to Biostatistics. MJP Publisher.
6. ICMR Bioethics Unit. 2019. ICMR Policy on Research Integrity and Publication Ethics. New Delhi: Indian Council of Medical Research.

- a. Demonstration of dissection of Earthworm (digestive, nervous and reproductive systems) through video clippings/models/charts.

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- b. Specimens : *Nereis*, *Heteronereis*, *Polynoe*, *Tubifex*, *Eunice*, *Aphrodite*, *Chaetopterus*, *Arenicola*, *Pontobdella*, *Amphitrite* and *Hirudinaria*.
- c. Prepared slides : Earthworm (T.S. typhlosolar region, setae, pharyngeal nephridium, septal nephridium, integumentary nephridium), *Nereis* (Parapodium), Leech (T.S. through different regions).

## 2. Arthropoda

- a. Demonstration of dissection of *Palaemon* (appendages, digestive, nervous and reproductive systems) through video clippings/models/charts.
- b. Specimens : *Peripatus*, *Leptisma*, Cockroach, Grasshopper, Praying mantis, Earwig, Dragonfly, Termite (queen and other castes), Ant, Butterfly, Moth, Beetles, Wasp, Honeybee, Crab, Prawn, *Lepas*, *Salanus*, *Agas*, *Limulus*, Scorpion, Spider, Millepede and Centipede.
- c. Prepared slides : Body louse, Bed-bug, Rat flea, *Cynips*, *Cyclops*, *Daphnia*, trachea of insects, gill and statocyst of Prawn. Trachea of insect, mouthparts of Cockroach, Mosquito, Honeybee, Housefly and butterfly.

## 3. Mollusca

- a. Demonstration of dissection of *Anodonta* (digestive and nervous systems) through video clippings/models/charts.
- b. Specimens : *Anodonta*, *Mytilus*, *Pholas*, *Pecten*, *Halotis*, *Aplysia*, *Doris*, *Limax*, *Pila*, *Sepia*, *Octopus*, *Nautilus*, *Chiton* and *Dentalium*.
- c. Prepared Slides : Glochidium larva, radula of *Pila*, gill lamina of *Anodonta*.

## 4. Echinodermata

- a. Demonstration of anatomy of *Asterias* through charts/model/ video clipping.
- b. Specimens : *Asterias*, *Echinus*, *Cucumaria*, *Antedon*, *Ophiotricha*.
- c. Prepared slides : T.S. arm of Starfish, tube feet, larval forms of echinodermata

## 5. Project based on general information on animals selecting atleast one representative from each phylum.

Note : Candidates will be required to submit duly signed note books of practical record.

### Books Recommended

1. *Invertebrates* Vols. I, II, III, IV & V by L.H. Hyman, McGraw Hill, New York (1940- 51)
2. *Text book of Zoology* by Marshall and Williams (1962).
3. *Invertebrates Structure and function* by E.J.W. Barrington. English Language Book Society & Nelson (1969).
4. *Insect's Text Book of Entomology* by Richards and Davies. Methuen & Co. Ltd. New York:EP Dutton & Co. Inc.(1983).
5. *Principles of Insect Morphology* by R.E. Snodgrass. McGraw Hill, New York (1935).
6. *The Insects : Structure and Function* by R.F. Chapman. English Language Book Soc. & Hodder and Sloughton, G. Britain (1978).

**PAPER-VII : COMPARATIVE ANATOMY OF VERTEBRATES – II**

Theory hours per week : 4 hours

Practical hours per week : 3 hours

Total Marks	: 100
Theory	: 80
Internal Assessment	: 15
Annual Theory Exam	: 65
Practical	: 20
Internal Assessment	: 05
Final Practical	: 15

**Objectives of the Course :**

To draw a comparative account of anatomy of vertebrates and hence to understand the evolution of different systems in vertebrates.

**UNIT-I**

Comparative account of the following systems of the vertebrates with evolutionary trends found pisces to mammals :

- Respiratory system : Respiratory organs.  
Types of respiratory mechanisms (gills, lungs, skin and accessory respiratory organs).
- Urinogenital system : Succession of kidney (archinephros, pronephros, mesonephros, and metanephros), osmoregulation, evolution of gonads and urinogenital ducts.

**UNIT-II**

- Nervous system : Comparative account and evolution of brain, spinal cord and cranial nerves.
- Sense organs : Chemoreceptors, photoreceptors and mechanoreceptors.

**Note :** Nine questions to be set. First question of 15 marks, covering the whole syllabus will be compulsory and will consist of 10 short answer questions of 1½ marks each. For the remaining 8 questions, 4 to be set from each Unit I and II and 2 to be attempted from each Unit. Each question from Units I and II will carry 12½ marks.

**Practicals based on theory paper VII**

1. Aves : *Casuarinus, Ardea, Anas, Milvus, Pavo, Eudynamis, Tyto* and *Alcedo*.
2. Mammalia : *Ornithorhynchus, Echidna, Didelphis, Macropus, Loris, Macaca, Manis, Hystrix, Funambulus, Panthera, Canis, Herpestes, Capra, Pteropus*.
3. To study the skeleton of *Gallus, Oryctolagus*.
4. Demonstration of dissection of Chick and White Rat through video clipping/models/charts.  
Chick : Digestive, arterial, venous and urinogenital systems.  
White Rat : Digestive, arterial, venous and urinogenital systems.
5. Study of the histology of different organs of frog and rat/rabbit through permanent stained slides.
6. Project based on general information on animals selecting atleast one representative from each class/Bird migration.



#### Paddy

- (i) *Heteroglyphus banian* (Rice grass hopper)
- (ii) *Leptocorisa varicornis* (Ground bug)

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#### Wheat

- (i) *Tenymecus indicus* (Ghughia weevil)
- (ii) *Sesamia inferens* (Wheat stem borer)

#### B. VEGETABLES

- (i) *Dacus cucurbitae* (Pumpkin fruit fly)
- (ii) *Raphidopalga foveicollis* (Red pumpkin beetle)

#### C. FRUITS

- (i) *Drosicha mangifera* (Mango mealy bug)
- (ii) *Diaphorina citri* (Citrus psylla)

3. Pests of stored food products with particular reference to their systematic position, habits, nature of damage caused by them along with the outlines of their life cycles :
  - (i) *Callosobruchus maculatus* (Pulse beetle)
  - (ii) *Sitophilus oryzae* (Rice weevil)
  - (iii) *Tribolium castaneum* (Rust red floor beetle)
  - (iv) *Sitotroga cerealella* (Angoumois grain moth).

#### 4. Insect control :

- (a) Chemical control : Categories of pesticides, important examples, their application and mode of action; Insect repellents and attractants.
- (b) Biological Control : Principles, History, use of parasites, predators and pathogens.
- (c) Integrated Pest Management (IPM).

**Note :** Nine questions to be set. First question of 15 marks, covering the whole syllabus will be compulsory and will consist of 10 short answer questions of 1½ marks each. For the remaining 8 questions, 4 to be set from each Unit I and II and 2 to be attempted from each Unit. Each question from Units I and II will carry 12½ marks.

#### Practicals based on theory paper XV

1. Study of insect biodiversity in natural environment and preparation of project based on the observation.
2. Identification marks and taxonomic status of insect pests of crops vegetables, fruits and stored products mentioned in theory syllabus.
3. Demonstration of dissection of insects for the study of following systems through charts/models/video clippings :
  - a. Digestive System
  - b. Nervous System
  - c. Reproductive System.
4. Systematic position upto family and ecology of the following medical and veterinary pests :
  - a. *Anopheles* b. *Culex* c. *Aedes* D. Blow fly e. Bot fly f. Horse fly g. Flesh fly.
5. Introduction to apiculture practices and handling of Beehives in insects.
6. Study of male and female external genitalia of insects through permanent slides.

17. *The Biology of Fishes*. New introduction by Dr. Vijay Dev Singh. Ist. Edn. Kalya. Biotech. Books, 2007.
18. *Fish Management and Aquatic Environment*. Arvind Kumar and Pushpata Duksey. Daya Publishing House, 2006.

#### PAPER XIX : ENVIRONMENTAL BIOLOGY AND WILD LIFE

Theory hours per week : 4 hours

Practical hours per week : 3 hours

Total Marks	:	100
Theory	:	80
Internal Assessment	:	15
Annual Theory Exam.	:	65
Practical	:	20
Internal Assessment	:	05
Final Practical	:	15

#### Objectives of the Course :

To educate the students about the basic environmental phenomena like pollution, ecosystem, biogeochemical cycles, etc.

To educate the students about the importance of wild life conservation.

#### UNIT-I

1. **Environmental Pollution** : Causes impact and control measures of air, water and noise pollution, management of wastes, Environment Protection Act 1986.
2. **Natural resources** : Natural resources and their conservation.
3. **Energy resources** : Study of renewable and non-renewable energy resources. Non conventional energy resources.
4. **Environmental education** : Goals, objectives, and methods of teaching of environmental education.
5. **Ecosystem Dynamics and Management** : Stability and complexity of ecosystems. Speciation and extinctions, environmental impact assessment, sustainable development. Green Chemistry.

#### UNIT-II

1. **Zoogeography** : Zoogeographical regions and their fauna.
2. **Wildlife of India** : Different types with references to animals, causes of depletion, significance and conservation of wildlife.
3. **Sanctuaries and National Parks** : Location and Important fauna of the sanctuaries and national parks of India.
4. **Wildlife Projects** : Tiger Project, Crocodile Breeding Project, Hangal project, Gir lion Sanctuary project.

**Note** : Nine questions to be set. First question of 15 marks, covering the whole syllabus will be compulsory and will consist of 10 short answer questions of 1½ marks each. For the remaining 8 questions, 4 to be set from each Unit I and II and 2 to be attempted from each Unit. Each question from Units I and II will carry 12½ marks.

#### Practicals based on theory paper XIX

1. To study the distribution of animals through zoogeographical maps.
2. A visit to a zoological park to study different wild animals and make a report.
3. To estimate the alkalinity of water.
4. To estimate the chlorides of water.
5. To estimate the nitrates of water.
6. To study the different types of phytoplankton.
7. To study the different types of zooplankton.





PANJAB UNIVERSITY, CHANDIGARH-160014 (INDIA)  
(Estd. under the Panjab University Act VII of 1947—enacted by the Govt. of India)

SYLLABI

FOR

B.A. & B.Sc. (GENERAL) THIRD YEAR (SEMESTER SYSTEM)  
EXAMINATIONS, 2019-2020

(SEMESTER : FIFTH AND SIXTH)

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*Fifth Semester : November/December, 2019*  
*Sixth Semester : April/May, 2020*

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**Practicals based on Theory Paper ZOO-502A (ZOO-352A)**

1. Introduction to Medical Entomology in various orders.
2. Study of permanent slides and specimens of parasitic protozoans, helminthes and arthropods mentioned in theory syllabus.

**OPTION-II-ECONOMIC ENTOMOLOGY AND PEST MANAGEMENT-I (ZOO-502B)**

**UNIT-I**

Introduction to Entomology with various orders.

Comparative studies of mouth parts in Grasshopper, Honeybee, Butterfly, Red-Cotton bug, House fly and Mosquito.

Major modifications in the antennae and legs of insects.

Development of Insects: Different type of metamorphosis along with a study of different kinds of larvae and pupae.

Systematic position, habits and nature of damage of the following pests of crops and vegetables :

**I. Sugarcane :**

1. Sugarcane leaf hopper (*Pyralia perpusilla*) alongwith life cycle and control measures.
2. Sugarcane top borer (*Scirpophaga nivella*)
3. Sugarcane stem borer (*Chilo ereina fusca ellus*)

**II. Cotton :**

1. Pink bollworm (*Pectinophora gossypiella*) alongwith life cycle and control measures.
2. Red cotton bug (*Dysdercus ingulatus*)
3. Cotton grey weevil (*Myloecerus maculosus*)
4. Surface grasshopper (*Chrotogonus trachipterus*)
5. Cotton jassid (*Empoasca fabae*)

**UNIT-II**

**III. Paddy :**

1. Rice Gurdhy Bug (*Leptocoris savaricoris*) alongwith life cycle and control measures.
2. Rice grasshopper (*Hieroglyphus banian*)
3. Rice Hispa (*Diclaspis armigera*)

**IV. Wheat :**

1. Wheat stem borer (*Sesamia inferens*) alongwith life cycle and control measures.
2. Termites (*Microtermes*)
3. Aphids (*Macrosiphum miscanthi*) Jassids (*Amrasca* sp.)

**V. Vegetables :**

1. Red pumpkin beetle (*Aulacophora foveicollis*)
2. Pumpkin fruit fly (*Dacus cucurbitae*) alongwith life cycle and control measures.
3. Hadda beetle (*Epilachna vigintioctopunctata*)

**UNIT-III**



3. House fly (*Musca domestica*) along with life cycle of house fly.
4. Horse fly (*Tabanus striatus*)
5. Blow fly (*Calliphora erythrocephala*)
6. Warble fly (*Hypoderma lineatum*)
7. Poultry louse (*Menopon gallinae*)
8. Sucking louse (*Haematopinus suis*)
9. Fleas (*Xenopsylla cheopis*)

**Note:** Nine questions are to be set. Question No.1 is compulsory consisting of short answer type questions covering the whole syllabus. It will have 8 parts of 1 mark each. Two questions are to be set from each Unit. One question is to be attempted from each Unit. In all, five questions are to be attempted including compulsory one. 50% of the questions are to be split up into 2-4 sub-parts.

#### Books Recommended

1. Atwal, A.S. : Agricultural Pests of India and South East Asia, Kalyani Publishers, New Delhi, 1991.
2. Nair, M.R.G.K. : Insects and Mites of Crops in India, ICAR, New Delhi, 1975.
3. Kumar, A. and Nigam, P.M. : Economic and Applied Entomology, Emkay Publications, 1991.
4. Matheson, R. : Medical Entomology, Comstock Publishing Company, Inc., 1950.
5. Metcalf, R.L. & Metcalf, R.A. : Destructive and Useful Insects, McGraw Hill Book Company, Inc., New York, Toronto, London, 1951.

#### Practicals based on Theory Paper ZOO-502B (ZOO-352B)

1. External morphology and identification marks of the crops and vegetables pests : *Pyrausta nactella* (Sugarcane leaf hopper), *Pectinophora gossypiella* (Pink bollworm), *Leptocorisa varicornis* (Greenbug), *Heteroglyphus banian* (Paddy grass hopper), *Dacus cucurbitae* (Pumpkin fruit fly).
2. External morphology and identification marks of the following stored grain pests : *Sitophilus oryzae* (Rice weevil), *Tribolium castaneum* (Rustred flour beetle), *Rhyzopertha dominica* (Lesser grain borer/suri), *Trogoderma granarium* (Khapra beetle), *Callosobruchus maculatus* (Pulse beetle/Dhara).
3. External morphology and identification marks of the following insects of Medical/Veterinary importance- Mosquitoes (*Culex*, *Anopheles* and *Aedes*), house fly (*Musca domestica*), blow fly (*Calliphora erythrocephala*), warble fly (*Hypoderma lineatum*) and horse fly (*Tabanus striatus*).
4. A study of different types of larvae and pupae of insects through slides, charts etc.
5. Project: Study of life cycle of any insect.

#### OPTION III: INLAND FISHERIES & AQUACULTURE-I (ZOO-502C)