



# VIDYASAGAR UNIVERSITY

CENTRE FOR CONTINUING AND ADULT EDUCATION

P.O.: VIDYASAGAR UNIVERSITY, DIST: PASCHIM MEDINIPUR, PIN 721102, WEST BENGAL.

Phone: 03222- 276554/55/57/58; Fax 03222-275329/297 Cell: 8373861707/8373063961

Ref.No. VU/CCAЕ/ 93 /2022

Date: 09<sup>th</sup> June, 2022

To  
The Principal,  
Kharagpur College  
Inda, Kharagpur  
Paschim Medinipore:721305

Dear Sir,

In reference to your application Ref. No.KC/Certificate Course/Yoga/CCAЕ and Ref. No.KC/Certificate Course/Green Audit/CCAЕ Dated- 09-06-2022, we are glad to offer you the following Certificate courses to run at your institute/campus, only once, within the academic session 2021-22 within the periphery of the Rules and Regulations of Certificate/Diploma under CCAЕ, Vidyasagar University.

I do sincerely hope that you will do your best to run the courses smoothly and efficiently.

SI No	Course	Intake	Duration	Fees
1	YOGA	50	10 Days	Rs 100/- each participant
2	GREEN AUDIT	80	15 Days	Rs 100/- each participant

Thanking You.

Regards,

  
(DR AVIJIT ROYCHOU DHURY)  
DIRECTOR, CCAЕ

Director  
Centre for Continuing and Adult Education  
Vidyasagar University  
Inda, Medinipore- 721102

**KHARAGPUR COLLEGE**

**NOTICE**

Celebrating of **International Yoga Day**, organised by **Department of Physical Education**, Kharagpur College Morning Shift on 21-06-2023 in the H.B Sarkar Hall at 8:00A.M. to 11:00 A.M.

Resource Person : **Smt. Nupur Bhattacharya**, Ex-Student  
**Smt. Banashree Routh** (SACT) and  
**Sri. Writam Pradhan** ( SACT)

Co-coordinator-  
**Dr. Sukla Mandal Saha**,  
( HOD- Physical Education Department)  
Morning In-charge



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Principal  
Kharagpur College

Principal  
Kharagpur College

**Kharagpur College**

**CERTIFICATE COURSE ON YOGA**

ON THE OCCASION OF INTERNATIONAL YOGA DAY, 21 JUNE, 2022 ORGANISED BY DEPARTMENT OF PHYSICAL EDUCATION AND NATIONAL SERVICE SCHEME (NSS), KHARAGPUR COLLEGE A CERTIFICATE COURSE ON YOGA WILL BE CONDUCTED IN THE COLLEGE PREMISES.

**COURSE DURATION – 10<sup>TH</sup> JUNE TO 21<sup>ST</sup> JUNE, 2022 TIME- 8 AM TO 11 AM (EVERYDAY)**

**COURSE FEE – 100/-**

**VENUE – KHARAGPUR COLLEGE**

**COURSE CO-ORDINATOR – DR. SUKLA MANDAL SAHA ,MORNING-IN-CHARGE , KHARAGPUR COLLEGE**

**CONTACT PERSON– PROF. SUBRATA PARIA(ASSOCIATE PROFESSOR) – 9434543367**

**SK ANISUR RAHMAN (ASSISTANT PROFESSOR)- 8944979641**

**BANASHREE ROUT (SACT-II) – 7586987001**

**WRITAM PRADHAN (SACT-II) – 9775194581**

Sd/-

Dr. Sukla Mondal Saha

Morning-in-charge



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### Proposed Syllabus for the Certificate course on YOGA- 10<sup>th</sup> June to 21<sup>st</sup> June,2022

- Module 1: Concept of YOGA ,Pranayam and Meditation
- Module 2: Importance of the YOGA ,Pranayam and Meditation in our day to day life
- Module 3: Different between YOGA ,Pranayam and Meditation
- Module 4: Suryanamskar : its importance and relevance
- Module 5: Etymological Meaning & Defination of ‘Yoga’.
- Module 6: Yogic Anatomy & Physiology as per Yoga.
- Module 7: Personality theories.
- Module 8: Basic Yoga Texts: Principles Upanishads Bhagavad Gita, Yoga Vasishtha
- Module 9: Allied Sciences: Anatomy and Physiology, Diet and Nutrition, General Psychology, and Counseling.
- Module 10: Practical Yoga: Asana, Pranayama, Dharna Dhyana, Bandha, Mudra & Shatkriya

**Following are some Reference books for Certificate courses on Yoga:**

<b>Books</b>	<b>Author</b>	<b>Publishing House, Year.</b>
Outlines of Indian Philosophy	Hiriyanna	Motilal Banarsidass Publisher, 2014
Indian Philosophy	Dr S. Radhakrishanan	Oxford University Press 1923
Hatha Yoga Pradipika	Yogi Swatmarama	Yogavidya.com, 2002
Yoga Sutras of Patanjali	Sadhana Pada with Exposition of Vyasa	Motilal Banarsidass, 2002
Introduction to Indian Philosophy	Dutta & Chatterji	Rupa & Co, 2015
The Yoga system of Patanjali	James, Hougton, wood.	Forgotten Books, 2018
Science of Yoga	I.K.Taimni	Theosophical Publishing House, 2007

Sd/-

Dr. Sukla Mondal Saha

Morning-in-charge



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# **KHARAGPUR COLLEGE**

## ***CERTIFICATE COURSE ON YOGA, 2022***

### **Theory Examination**

Full Marks : 20

Time : 30 Minutes

Date : 08.07.2022

**Answer any 10 Questions**

**10 x2=20**

1. What is Yoga ?
  2. What are the eight limbs of yoga according to Patanjali ?
  3. What is Truth ?
  4. In what Physical conditions one should not practice Pwaban Muktasana ?
  5. How many types of Pranayama ?
  6. What is Asana?
  7. What is Anatomy ?
  8. What is Swadhyay ?
  9. How many Blood cells of human body ?
  10. In what Physical conditions one should not practice Dhanurasana ?
  11. Mention the origin of Yoga in India ?
  12. What are wrong conceptions of Yoga ?
  13. How many postures are there in Surya Namaskar ?
  14. Mentions at least two of postures of Surya Namaskar ?
  15. What is Physiology ?
-

# **KHARAGPUR COLLEGE**

***CERTIFICATE COURSE ON YOGA, 2022***

**Theory Examination**

**Full Marks : 20**

**Time : 30 Minutes**

**Date : 15.07.2022**

**Answer any 10 Questions**

**10 x2=20**

1. Distinguish between Yoga and Meditation ?
  2. What are the eight limbs of yoga according to Patanjali ?
  3. What is Truth ?
  4. In what Physical conditions one should not practice Pwaban Muktasana ?
  5. How many types of Pranayama ?
  6. What is Asana?
  7. What is Anatomy ?
  8. What is Swadhyay ?
  9. How many total cells of human body ?
  10. In what Physical conditions one should not practice Dhanurasana ?
  11. Mention the theme of the 8<sup>th</sup> International Yoga Day ?
  12. What are wrong conceptions of Yoga ?
  13. How many postures are there in Surya Namaskar ?
  14. Mentions at least two of postures of Surya Namaskar ?
  15. What is Physiology ?
-



# KHARAGPUR COLLEGE

## KHARAGPUR

ESTD. : 1949

P.O.– Inda, Kharagpur, Municipality– Kharagpur, Sub-Division– Kharagpur,  
P.S.– Kharagpur (T), Dist.– Paschim Medinipur, West Bengal, PIN– 721305.

Date: 08.05.2022

### Notice

This is to inform to all the students of second semester of the College that the Department of Political Science is introducing a short-term certificate course titled “Research Methodology on Social Science ” which will continue from 18th May to 28th May 2022. This course aims to provide students with an in-depth understanding of the latest developments and research in the field of Social Science. Interested students should to take advantage of this opportunity to enhance their knowledge.

  
HOD

Department of Political Science



Principal  
Kharagpur College

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Kharagpur College



Department of Political Science  
Certificate Course on  
**Research Methodology in Social Science**  
**Module-wise detailed syllabus**  
Session 2021-2022  
18/04/2022 - 28/04/2022 (30 hrs)

Module 1: Meaning of Research

- A) Contending Perspective of Social Science Research
- B) Preparation of Research Proposal
- C) Writing a Research Proposal.

Module 2: Quantitative Method

- A) Methods of data collection and data analysis
- B) Structured and unstructured Interview
- C) Ethnography
- D) Case study method

Module 3: Qualitative Method

- A) Difference from Quantitative Method
- B) Content Analysis
- C) Ethnography Unstructured
- D) Mixed Research

Module 4: Review of Literature

- A) How to Review a book and article in journal
- B) Content Study
- C) Finding Research Gap
- D) Primary and Secondary Data

Module 5: Research Ethics

- A) Needs for Research Ethics
- B) Principles value edition to the knowledge
- C) Responsibility of Researcher

## Module 6 : Sampling

- A) Meaning
- B) Relations to study population
- C) Different types of sampling

## Module 7: Probability and Non- Probability Sampling

- A) Random Sampling
- B) Systematic Sampling
- C) Stratified Sampling

## Module 8: Theoretical Background

- A) Positivism
- B) Karl Popper and August Conte.
- C) Thomas Kuhn.

## Module 9 : Research Proposal

- A) How to Write a Research Proposal
- B) Research Objective and Questions
- C) Theoretical Population and Study Population.

## Module 10: Referencing and Citation

- A) MLA, APA
- B) Chicago
- C) Footnote and End Note
- D) In-Text Citation
- E) Bibliography



Head

Department of Political Science

Kharagpur College  
Department of Political Science  
30 hours duration Certificate Course  
on "*Research Methodology in Social Science*"

EVALUATION PAPER

Time : 30 Minutes;                      F.M -20

Date : 28/04/2022

Full Name.....

College Roll No.....

Answer all the Questions given below. All Questions are of equal marks. (10X2= 20)

1. The word Research derived from
  - A) Latin
  - B) Greek
  - C) English
  - D) Japanizes
  
2. Who defined Research as 'Systematized effort to gain new knowledge'?
  - A) Redman and Mory
  - B) F.W Taylor
  - C) Ross Taylor
  - D) Alan Ball
  
3. Research is basically
  - A) Methodology of Enquiry
  - B) Search of Truth
  - C) A systematic exploration of Facts
  - D) All of the above
  
4. Where is the objective observation used ?
  - A) In conducting experiments
  - B) In Research
  - C) In normal Behavior
  - D) In almost all the situation

5. What do you mean by Synopsis of a Research Project?
- A) The Blue Print of Research
  - B) Extracts from the Research Observations
  - C) A Plan of the Research
  - D) Summary of the findings of the Research
6. The advantage of Sampling is
- A) Time saving
  - B) Capital Saving
  - C) Increase Accuracy
  - D) Both A & B
7. 'Tippit Table' is
- A) A table of random digits
  - B) Used in statistical investigations
  - C) Used in Sampling method
  - D) All of the above
8. What is the base(s) of formulation of Hypothesis
- A) Reflection
  - B) Deduction
  - C) Observation
  - D) All of the above
9. Which is not the characteristic of Research?
- A) Basic Research
  - B) Holistic Perspective
  - C) Context and Sensitivity
  - D) Ex Post facto Research
10. Which of the following is a type of Hypothesis?
- A) Interrogative Hypothesis
  - B) Declarative Hypothesis
  - C) Directional Hypothesis
  - D) All of the above

Kharagpur College

Date:28/04/2022

Department of Political Science

30 hours duration Certificate Course

on "*Research Methodology in Social Science*"

Duration : 18/04/2022 – 28/04/2022 (30 hrs)

**Course Outcome:** The main objective of the course was to develop the research sense broadly so that some scientific ideas of doing a research can be provided to the students. This course tried to ensure to build a good researcher who would be methodologically literate and theoretically sound. As far as the idea of 'laboratory to land is concerned', this course helped our students to develop such ideas that can be used directly to meet different day-to-day socio-political-economic problems. At the same time, this course helped our students to know how to form research questions, how to identify research gap, how to read out a book, necessity of critical analysis, where lies the importance of methodology – all these things together can develop the entity of a good learner from the being of a student permanently and in long run this would be helpful for the academic environment.

**KHARAGPUR COLLEGE**  
**Department of Political Science**  
**Report of the Certificate Course**  
**Session: 2021-22**

A 30 hours duration Certificate Course was conducted by the Department of Political Science, Kharagpur College, titled "*Research Methodology in Social Science*" on and from 18/04/2022 to 28/04/2022..

Module-wise detailed course syllabus was published before the Course. 52( fifty two) students have enrolled themselves and the same number of students of the Department have successfully completed the course through an evaluation process.

The syllabus of this certificate course was consisted of 10 modules and the same was conducted through 10(Ten) working days (02 classes per day with a span of one and a half hour each, excluding question-answer session); 20 (twenty) classes on 20(twenty) different topics.

Teachers from different universities, colleges and the teachers of different Departments of Kharagpur College along with the Departmental teachers, have taken the aforesaid number of classes as per course schedule. Through a MCQ pattern question the evaluation process was conducted , scripts were examined by the teachers, and on the last day after valedictory session participation certificates were distributed among the participants.



(Head)

Department of Political Science  
Kharagpur College.

# NOTICE

## KHARAGPUR COLLEGE DEPARTMENT – PHYSIOLOGY

Date; 10.05.2022

It is hereby inform that Certificate course on “**Introductory Human Physiology: How to improve health and fitness**” is organize by Physiology department for UG students of our college, course commence from 18<sup>th</sup> May 2022 and end on 30<sup>th</sup> May 2022.



Principal



HOD of Physiology

*Principal*  
Kharagpur College



# **Certificate course on “Introductory Human Physiology: How to improve health and fitness”.**

[Duration :-(30+02) hrs, Theory:- 10 hrs, Practical:- 20 hrs]

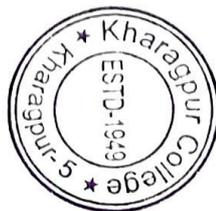
## **Syllabus of this course:**

### **Theory:**

1. Basic idea about different public health issues.
  - Malnutrition, Overnutrition, Undernutrition, Obesity, Hypertension, Diabetes, PCM (Marasmus, Kwashiorkor), Endemic goiter, Rickets, Osteomalacia, Xerophthalmia, Beriberi, Colour blindness, Hyperopia (farsightedness), Myopia (nearsightedness).
2. Possible remedial measures of these health issues.
3. Basic concept on some biological parameters.
  - Height, Weight, ACU, BMI, BSA, Blood pressure, Pulse rate, Respiratory rate, PFI.

### **Practical:**

1. Measurement of Height and Weight.
2. Measurement of Blood pressure by Sphygmomanometer at sitting condition. Calculate the Mean Arterial Blood Pressure (MABP).
3. Modified Harvard step test and determination of Physical fitness.
4. Measurement of Heart rate and Pulse rate.
5. Measurement of Respiratory rate.
6. Determination of Visual acuity by Snellen’s chart / Landolt’s chart.
7. Determination of Colour blindness by Ishihara chart.



## KHARAGPUR COLLEGE

Certificate course on Human Physiology: How to improve health and fitness

Organized by Department of Physiology

Date:

Theory-20 marks

Answer the following questions:

10×2 = 20

1. Which instrument is used to measure Blood Pressure?

- A) Thermometer
- B) Sphygmomanometer
- C) Electroencephalogram

2. Full form of BMI

- A) Body Surface Area
- B) Body Mass Index
- C) Basal Metabolic Rate

3. What is called Hypertension?

- A) High Blood Pressure
- B) High Blood Sugar
- C) Low Blood Pressure

4. Normal value of Blood pressure in adult

- A) 120±10 / 80±10mmHg
- B) 140±10/ 90±10mmHg
- C) 100±10/ 70±10mmHg

5. Normal Pulse Rate of adult is

- A) 70-80 beats/ min
- B) 60-70 beats / min
- C) 110-120 beats/ min

6. Normal Body Temperature of Human body is

- A) 98.4°F
- B) 95.5°F
- C) 100°F



**7. Formula of BMI is**

- a. **Weight (kg)/ [Height(m)]<sup>2</sup>**
- b. **Weight (g)/ [Height(cm)]<sup>2</sup>**
- c. **Weight (g)/ [Height(m)]<sup>2</sup>**

**8. Anthropometric rod is used to measure**

- a. **Height**
- b. **Weight**
- c. **BMI**

**9. Full form of PCM**

- a. **Protein Calorie Malnutrition**
- b. **Protein Energy Malnutrition**
- c. **Pulse Calorie Malnutrition**

**10. Full form of ACU**

- a. **Adult Calorie Unit**
- b. **Adult Consumption Unit**
- c. **Adult Content Unit**
  - i. -----



# KHARAGPUR COLLEGE

## DEPARTMENT – PHYSIOLOGY

Date: 16.05.2022

Notice for classes of Certificate course on “Introductory Human Physiology: How to improve health and fitness”

Classes will be conduct on following scheduled dates. The dates are given below.

Date	Time	Topics (Theory and Practical)	Allotted teacher
18.05.2022	11.00am-01.00pm	Basic idea about different public health issues.	AP
19.05.2022	11.00am -01.00pm	Malnutrition, Overnutrition, Undernutrition, Obesity.	AP
20.05.2022	11.00am -01.00pm	Hypertension, Diabetes, PCM (Marasmus, Kwashiorkor), Endemic goiter, Rickets, Osteomalacia.	AP
21.05.2022	11.00am -01.00pm	Xerophthalmia, Beriberi, Colour blindness, Hyperopia (farsightedness), Myopia (nearsightedness).	AC
23.-5.2022	11.00am -01.00pm	Possible remedial measures of these health issues. Basic concept on some biological parameters. Height, Weight, ACU, BMI, BSA, Blood pressure, Pulse rate, Respiratory rate, PFI.	AC
24.05.2022	10.00am-02.00pm	1. Measurement of Height and Weight.	AC
25.05.2022	10.00am -02.00pm	2. Measurement of Blood pressure by Sphygmomanometer at sitting condition. Calculate the Mean Arterial Blood Pressure (MABP).	AP
26.05.2022	10.00am -02.00pm	3. Modified Harvard step test and determination of Physical fitness.	AC
27.052022	10.00am -02.00pm	4. Measurement of Heart rate and Pulse rate. 5. Measurement of Respiratory rate.	AP
30.05.2022	10.00am -02.00pm	6. Determination of Visual acuity by Snellen's chart / Landolt's chart. 7. Determination of Colour blindness by Ishihara chart.	AC
31.05.2022	11.00am -01.00pm	Examination	AC + AP

Principal  
Kharagpur College



## Department of Physics

### Kharagpur College

#### Notice for Certificate Course on “Advanced Computer Programing using MATLAB & Python Language”.

**Date: 20.01.2022**

This is to inform all the 1<sup>st</sup> and 3<sup>rd</sup> semester students of the College that a certificate course on “Advanced Computer Programming using MATLAB & Python Language” will be organized by the Department of Physics, Kharagpur College on and from 30.01.2022. The course duration will be 30 hours. This course will be offline mode. Last date of registration for the course is 27.01.2022. For registration you are asked to submit your name to the course coordinator or at the college office.

Members of the Organizing Committee:

1. Dr. Jyotirmoy Pramanik, Associate Professor in Physics
2. Dr. Ritwik Saha, Assistant Professor in Physics
3. Prof. Rudra Narayan Mondal, Assistant Professor & HOD in Physics
4. Dr. Samir Kumar Giri, Assistant Professor, Physics, Coordinator



 20/01/22  
Principal  
Kharagpur College

*Principal*  
*Kharagpur College*

**Department of Physics and Mathematics, Kharagpur College**  
**Certificate Course on “Advanced Computer Programming using MATLAB & Python Language”**  
**Course Schedule**

30.01.2022	Inaugural Address by HOD Physics & Mathematics and brief introduction to the course (12.00 noon to 2.00 pm.	
Dates	11 am -12 pm	12 pm -1 pm
05.02.2022	JP	SKG
06.02.2022	RNM	RS
07.02.2022	JP	SKG
08.02.2022	RS	RNM
09.02.2022	JP	SKG
12.02.2022	JP	SKG
15.02.2022	JP	RNM
16.02.2022	RS	RNM
19.02.2022	RS	RNM
20.02.2022	RNM	RS
21.02.2022	SKG	JP
22.02.2022	JP	RNM
23.02.2022	RS	RNM
27.02.2022	RS	RNM
28.02.2022	SKG	JP
29.02.2022	Evaluation	Valedictory Address & certificate distribution

JP – Dr. Jyotrimoy Pramanik, RS – Dr. Ritwik Saha, RNM – Prof. Rudra Narayan Mondal, SKG – Dr. Samir Kumar Giri

  
**Coordinators of certificate course**



  
**Principal**

*Principal*  
**Kharagpur College**

**Department of Physics  
Kharagpur College**

**Certificate Course on “Advanced Computer Programming using MATLAB & Python Language”.**

**(Duration: 30.01.2022 onwards)**

***Module-1***

1. Local environment setup
2. Understanding the MATLAB environment
3. Basic syntax
4. Variables
5. Commands
6. Data Types
  - a. Some commonly used data types used in MATLAB
  - b. Data type conversion
7. Operators

***Module-2***

1. Decision making
  - a. if...endstatement
  - b. if...else ...endstatement
  - c. if... elseif...else ...endstatement
  - d. nested ifstatement
  - e. switchstatement
  - f. nested switchstatement
2. Loops
  - a. while loop
  - b. for loop
  - c. nested loop
3. Loop control
  - a. breakstatement
  - b. continuestatement
4. Vectors
5. Matrix
6. Arrays
7. Colon notation



### **Module-3**

1. Analytical Functions
2. Data Import
3. Data Output
4. Making plots

### **Module-4**

1. Algebra
2. Calculus
  - a. Calculating limits
  - b. Verification of basic properties of limits
  - c. Left and right sided limits
3. Differentiation
4. Integration
5. Polynomials

### **Module-5**

1. Finding roots of equation - Bisection Method, Newton Raphson Method
2. Integration - (Simpson 1/3, Trapezoidal rule)
3. Fast Fourier Transform

### **Module-6**

1. Differential Equations
2. System of Differential Equations
  - a. Solves system of linear differential equations
  - b. Differential equations in matrix form
3. Numerical solution of Second Order Differential Equations
  - a. Rewriting second order ode as a system of first order ode
  - b. Generating MATLAB function
  - c. Solving the system of first order ode using ode45
  - d. Plotting the solution
4. Differential Algebraic Equations
  - a. Specifying equations and variables
  - b. Reducing differential order
  - c. Checking and reducing differential index
  - d. Converting DAE system to MATLAB function handles
  - e. Finding initial conditions for solvers
  - f. Solving DAE using ode15i



### **Module-7**

1. File Handling: Reading from and writing to files; Handling exceptions and errors; Practical exercises on file handling
2. Plotting using Matplotlib: Define a Python function and plot in a domain. Bar chart plots, histograms, polar plots, pie plots, Plot from data file, saving the figures, subplots, multiple plots.
3. Drawing using turtle

### **Module-8**

1. Introduction to Python and its scientific computing libraries (NumPy, SciPy, Matplotlib)
2. Exploring common Python libraries (e.g., NumPy, Scipy)
3. Introduction to NumPy and its multidimensional arrays; Performing mathematical operations on arrays; Array indexing and slicing; Linear algebra operations with NumPy

### **Module-9**

1. Interpolation techniques using python: Newton's forward and Backward difference formula

### **Module-10**

1. Solving Ordinary Differential Equations (ODEs) using Euler's and RK2 methods
  2. Solving ODEs using scipy.integrate module
  3. Solving Boundary value problems using shooting method
- 

SKA



  
**Principal**  
**Kharagpur College**

Sample question for the certificate course on "Advanced Computer programming using MATLAB & Python Language".

- 1) Which among the following can be a variable name in Matlab
- a. x6
  - b. for
  - c. 1college
  - d. Calculate#1

Correct Answer: a

2) If  $f = \sin(x*y)$ . Which among the following Matlab code can be used to find the partial derivative of  $f$  with respect to  $x$ .

- a. `syms y`  
`diff(f)`
- b. `syms x,y`  
`diff(f,x)`
- c. `syms x,y`  
`diff(f,y)`
- d. `syms x`  
`diff(f)`

Correct Answer: b

3) Which among the following in-built function is used for solving numerical integration in Matlab.

- a. `integrate`
- b. `int`

- c. integration
- d. integral

Correct Answer: d

- 4) Which among the following in-built function is used for solving differential equation in Matlab.
- a. dsolve
  - b. dsolution
  - c. diffsolve
  - d. solvediff

Correct Answer: a

- 5) If A and B are two matrices. Which among the following is the correct MATLAB syntax to perform matrix multiplication (BA).
- a. A.\*B
  - b. B.\*A
  - c. B\*A
  - d. A\*B

Correct Answer: c

- 6) If A and B are two matrices. Which among the following is the correct MATLAB syntax to perform element wise multiplication of two matrices.
- a. A\*B
  - b. B\*A

- c.  $B^*.A$
- d.  $B.*A$

Correct Answer: d

- 7) Index of an array in Matlab start with
- a. 0
  - b. 1
  - c. Depends on the class of array.
  - d. Unknown

Correct Answer: b

- 8) What is the return type of angles function in Matlab.
- a. Degree
  - b. Radians and Degree
  - c. Radians
  - d. Depend on the argument.

Correct Answer: c

- 9) Which of the following command is used to clear command window in Matlab.
- a. `clc`
  - b. `clear`
  - c. `close all`
  - d. `clear all`

Correct Answer: a

10) Which among the following is not a predefined variable in Matlab

- a. inf
- b. pi
- c. i
- d. gravity

Correct Answer: d

11) Which among the following inbuilt function returns the adjoint of a matrix in Matlab.

- a. det
- b. inv
- c. adjoint
- d. adj

Correct Answer: c

12) In Matlab, which among the command is used to add text label to x axis.

- a. axes
- b. xlabel
- c. axis
- d. ylabel

Correct Answer: b

13)  $x=2*3;$

$y=x*2$

What will be the output when the above commands are executed in Matlab.

a.  $y=12$

$x=2*3$

b.  $y=12$

$x=6$

c.  $y=2*3*2$

$x=6$

d.  $y=12$

Correct Answer: d

14) What is the use of abs function in Matlab.

a. Returns the magnitude of a number.

b. Returns the square root of a number.

c. Returns the power of a number.

d. None

Correct Answer: a

15) Which among the following is used to check if two elements are equal in Matlab.

a.  $!=$

b.  $=$

c.  $==$

d. `isequal`

Correct Answer: c



# **KHARAGPUR COLLEGE**

**Certificate Course on**

# **HUMAN RESOURCE MANAGEMENT & PERSONNEL MANAGEMENT**



**Date : 21/03/2022 - 31/03/2022 (30 Hrs.)**

**Time : 10.00 a.m. to 01.00 p.m.**

**Venue : H.B. SARKAR HALL**

**Registration Link : <https://forms.gle/8eu9VFLFEz8Vc4Fn9>**

*Organised by*

**KHARAGPUR COLLEGE (MORNING SHIFT)**

# KHARAGPUR COLLEGE

## *Certificate Course*

*on*

## *Human Resource Management and Personnel Management 30 Hours*

*(21.03.2022 - 31.03.22)*

**Syllabus of the certificate course:** *Human Resource Management and Personnel Management*

*1. Computer Knowledge.*

*2. Concept of Human capital. Analysis of Accumulation of Human Capital and analysis of Human Development Index and its calculation. Human Development index of India and across the world.*

*3. Compensation and Benefit, selection I recruitment placement and training.*

4. Role of Human Capital and Machine Capital for the development of the Country.

5. Mindfulness and Mental wellbeing.

## Schedule for Classes

21.03.2022 (Tuesday) 10.00 am-11.00 am		Inaugural Address delivered by Dr. Bidyut Samanta, Principal, Kharagpur College Keynote Speaker-Dr. Sukla Mandal Saha, Morning in Charge, Kharagpur College		
Date	Name of the Resource Person	10.00 am – 11.00 am	11.00 am-12.00 noon	12.00 noon-1.00 pm
22.03.2022 (Wednesday)	Dr. Mahadeb Mukherjee		Theory	Theory
23.03.2022 (Thursday)	Prof. Tarun Kumar Roy	Theory	Practical	Practical
24.03.2022 (Friday)	Prof. Anupam Roy	Theory	Practical	Practical
25.03.2022 (Saturday)	Prof. Kuntal Das	Theory	Practical	Practical
27.03.2022 (Monday)	Rohit B., B.Tech, M.Tech., IIT	Theory	Practical	Practical
28.03.2022 (Tuesday)	Rohit B., B.Tech, M.Tech., IIT	Theory	Practical	Practical
29.03.2022 (Wednesday)	Dr. Sukla Mandal Saha	Theory		
	Dr. Kousik Bhattacharya		Practical	Practical
30.03.2022 (Thursday)	Dr. Anjana Mondal	Practical	Practical	Practical
31.03.2022 (Friday)	Andhra Bank Manager	Theory	Theory	Practical

Sd/-

Dr. Bidyut Samanta

(Principal)



ATTESTED  
  
Principal  
Kharagpur College

## **KHARAGPUR COLLEGE**

### **NOTICE**

A certificate Course on **Human Resource Management & personnel Management** will be organised by the Kharagpur College Morning Shift from 21-03-2022 to 31-03-2022 Duration of certificate Course will be 30 hrs. All Students of the B. A General (Morning shift and any student of Commerce Science of the college may join in the Course.

Members of the organizing Committee:

Co-coordinator. **Dr. Sukla Mandal Saha,**  
Associate prof. of Economies, Morning In-charge

- **Prof. Indranil Mahapatra,** SACT, English
- **Sri Milan De,** SACT, History
- **Sri Swapan Kamilya,** SACT, Political Science
- **Smt. Banashree Routh,** SACT, Physical Education
- **Sri Witam Pradhan** SACT, Physical Education
- **Sri Tirtharaj Biswas,** SACT, Bengali

Sd/-  
Dr. Bidyut Samanta  
Principal  
Kharagpur College



ATTESTED  
  
Principal  
Kharagpur College



# VIDYASAGAR UNIVERSITY

CENTRE FOR CONTINUING AND ADULT EDUCATION

P.O.: VIDYASAGAR UNIVERSITY, DIST: PASCHIM MEDINIPUR, PIN 721102, WEST BENGAL.

Phone: 03222- 276554/55/57/58; Fax 03222-275329/297 Cell: 8373861707/8373063961

Ref.No. VU/CCAЕ/ 93 /2022

Date: 09<sup>th</sup> June, 2022

To  
The Principal,  
Kharagpur College  
Inda, Kharagpur  
Paschim Medinipore:721305

Dear Sir,

In reference to your application Ref. No.KC/Certificate Course/Yoga/CCAЕ and Ref. No.KC/Certificate Course/Green Audit/CCAЕ Dated- 09-06-2022, we are glad to offer you the following Certificate courses to run at your institute/campus, only once, within the academic session 2021-22 within the periphery of the Rules and Regulations of Certificate/Diploma under CCAЕ, Vidyasagar University.

I do sincerely hope that you will do your best to run the courses smoothly and efficiently.

SI No	Course	Intake	Duration	Fees
1	YOGA	50	10 Days	Rs 100/- each participant
2	GREEN AUDIT	80	15 Days	Rs 100/- each participant

Thanking You.

Regards,

  
(DR AVIJIT ROYCHOU DHURY)  
DIRECTOR, CCAЕ

Director  
Centre for Continuing and Adult Education  
Vidyasagar University  
Inda, Medinipore- 721102

**Kharagpur College**  
**Kharagpur**  
**Notice for Certificate Course on Green Audit**  
**Date: 02.06.2022**

This is to inform all the students of the college that a certificate course on 'Green Audit' will be organised by the college on and from 13.06.2022. The course duration will be 30 hours. Maximum 50 students can be allowed in the course. Last date of Registration for the course is 10.06.2022. Registration Fee is Rs.100/-(Rupees One Hundred).

Members of the Organising Committee:

1. Prof. Mahanga Singh (Dept. of Botany)- Joint Coordinator
2. Sri Happy Das (Dept. of Botany)- Joint Coordinator
3. Prof. Subrata Paria (Dept. of Political Science)
4. Prof. Rajkumar Mandi (Dept. of Zoology)
5. Mrs. Moumita Chakraborty (Dept. of Zoology)
6. Sri Abhimanyu Mudi (Dept. of Zoology)
7. Sri Subhojeet Banerjee (Dept. of Zoology)
8. Sk. Safikul Haque (Dept. of Geography)
9. Sri Pankaj Patra (Dept. of Physics)
10. Mrs. Laboni Giri (Dept. of Chemistry)

Interested students are advised to contact the following persons for registration.

1. Sri Happy Das (Dept. of Botany, 9800809282)
2. Mrs. Moumita Chakraborty (Dept. of Zoology, 9734635956)
3. Sri Pankaj Patra (Dept. of Physics, 8637822068)



(b) 02/06/2022  
Principal  
Principal  
Kharagpur College

# CERTIFICATE COURSE ON GREEN AUDIT

## SYLLABUS

(Theory- 40 , Practical- 20)

### Theory

1. Concept in ecology, scope of ecology, inter relationships between the living world and the environment
2. Structure and function of ecosystem, food chain, food pyramids, pond ecosystem, eutrophication
3. Plant adaptations- Hydrophytes, Xerophytes and Mesophytes
4. Plant succession- types, processes and climax concept
5. Composition of soil, physical, chemical and biological components of soil, soil profile, types of soil, role of soil in cultivation, fertilizer management, chemical fertilizer and bio fertilizer, soil erosion, soil toxicity, soil health, soil microbes and sustainable use
6. Hydrosphere, hydrological cycle, water table, water conservation, wetland and its conservation
7. General account of environment pollution and control (soil, water, air), plastic as a pollutant
8. Concept of centres of origin, their importance with reference to Vavilov's work, cultivation of potato, brinjal, tomato, ladies finger and sugarcane
9. Natural resources, biological resources, renewable and non-renewable sources of energy, sustainable utilization, contemporary practices of resource management and conservation, carbon footprint.
10. Medicinal plants, conservation processes, importance of the following medicinal plants-(*Ocimum tenuiflorum*, *Adhatoda vasica*, *Catharanthus roseus*, *Andrographis paniculata*, *Centella asiatica*, *Azadirachta indica*, *Curcuma longa*, *Zingiber officinale*, *Aloe vera*, *Hygrophila spinosa*)
11. Biodiversity, significance, causes and impact of loss , conservation, Role of Forest, effect of deforestation, Green House effect and climate change; Effect on agriculture and biodiversity. Forest act 1997. Indian Wildlife act.

### Practical

1. Study plant community in the college campus
2. Microbial flora of water (aquatic zone in the college campus)
3. Determination of pH of water and soil
4. Carbon footprint
5. Preparation of compost
6. Water management, details of water analysis of college, conservation of water
7. Energy management, monthly energy utilization by different appliances in the college
8. Field report with a field excursion

**KHARAGPUR COLLEGE**  
**CERTIFICATE COURSE ON GREEN AUDIT-2022**  
**THEORY EXAMINATION**

TIME- 90MINS

F.M.- 1×40=40

ANSWER THE FOLLOWING QUESTIONS-

1. Acid rain is caused by increase in the atmospheric concentration of-  
A. O<sub>3</sub> and dust    B. SO<sub>2</sub> & NO<sub>2</sub>    C. SO<sub>3</sub> & CO    D. CO<sub>2</sub> & CO
2. Depletion of which gas in the atmosphere can lead to an increased incidence of skin cancers?  
A. Ozone    B. Ammonia    C. Methane    D. Nitrous oxide
3. Which of the following is an example of an ex-situ conservation?  
A. Sacred groves    B. Wildlife sanctuary    C. Seed bank    D. National park
4. Global warming can significantly be controlled by \_\_\_\_\_  
A. Increasing solid waste    B. Reducing water wastage  
C. Burning human-generated waste    D. Reducing fossil fuel consumption
5. The Taj Mahal is being affected by  
A. Noise pollution    B. Air pollution    C. Water pollution    D. None of these
6. Green House gas is  
A. Nitrogen    B. Oxygen    C. Hydrogen    D. Carbon dioxide
7. Chlorofluorocarbon is used in  
A. Refrigerators    B. Air conditioners    C. Perfumes    D. All
8. Most polluted river in the world is  
A. Yamuna    B. Cavery    C. Chenab    D. Ganga
9. Deforestation causes:  
A. Pollution    B. No floods    C. Soil erosion    D. None of these
10. Soil conservation means:  
A. Prevention of spread of desert    B. To check soil erosion by afforestation  
C. To check soil erosion by wind and rains    D. All of these

**KHARAGPUR COLLEGE**  
**CERTIFICATE COURSE ON GREEN AUDIT-2022**

11. Fifth of June is celebrated as:

- A. Darwin's birthday B. World population day  
C. World environment day D. World health and hygiene day

12. What is the scientific name of neem tree?

- A. *Curcuma longa* B. *Azadirachta indica* C. *Ocimum sanctum* D. *Chinchona officinalis*

13. Three water bodies were tested for salinity of water.

Water body = Salt concentration:

X=3 parts per thousand of salinity

Y=35 parts per thousand of salinity

Z= 110 parts per thousand of salinity

Select the correct option regarding this.

- A.X=Lagoon B.Y=Sea C.Z= Inland river D.None of these.

14. Most animals are tree dwellers in a :

- A. Temperate deciduous forest B. Tropical Rain forest  
C. Coniferous forest D. Thorn woodland.

15.  $\log S = \log C + Z \log A$

Above equation is derived from the relationship between species richness & area, on a logarithmic scale, which is a straight line.

Value of Z if we analyse in very large areas (like continents) will be between

- A. 0.1-0.2 B. 0.6-1.2 C. 2-4 D. 5-10

16. In rivet popper hypothesis, rivet indicates:

- A. Community B. Biosphere C. Ecosystem D. Species.

17. Highest sugarcane producing state in India is

- A. Maharashtra B. Uttar Pradesh C. West Bengal D. Tamil Nadu

18. Which element is present in highest amount in potato?

- A. water B. starch C. protein D. sugar

19. Carbon footprint per day per capita in India is

- A. 4.5kg B. 3.5kg C. 2.5kg D. 1.5kg

20. Alternative energy source which can full fill the demand of required energy of the world in absence of thermal energy is

- A. solar energy B. hydro electric energy C. nuclear energy D. bio gas energy

**KHARAGPUR COLLEGE**  
**CERTIFICATE COURSE ON GREEN AUDIT-2022**

21. Which one is the toxic element found in soil -  
A. Arsenic B. Nitrogen C. Magnesium D. Calcium
22. Which part of plant prevent soil erosion -  
A. Whole plant body B. Stem C. Twig D. Root
23. Sustainable use of soil by -  
A. Application of pesticides B. Watering regularly C. Rotation of crop D. Use of fertilizer
24. Soil microbes are -  
A. Bacteria and Fungus B. Arthropod and Worm  
C. Protozoa and Arthropod D. Ant and Beetle
25. Healthy soil consists of-  
A. Mineral, Organic matter, Water and Air B. Mineral, Microbe, Water and Air  
C. Mineral, Good bacteria, Fertilizer, Water D. Mineral, Warer, Air, Salt
26. The water cycle always starts in the  
A. Oceans B. Clouds C. Plant and animals D. It has no starting place and no ending place.
27. Which of the following is a reason why wetlands are important?  
A. Wetlands act as a filtering system B. Wetlands are a place where birds go to die  
C. Wetlands block water from flowing D. Wetlands provide habitat for cactus
28. Precipitation is another word for  
A. Breathing B. Ice melting C. Rain and snow D. Plant giving off water.
29. What is called for the collection of rain water for use?  
A. Rain collection B. Rainwater harvesting C. Rain digging D. Rain water pumping.
30. The upper part of an aquatic ecosystem contains  
A. Nekton B. Plankton C. Benthos D. All of the above
31. The pyramid of energy is always upright" states that  
A. The energy conversion efficiency of herbivores is better than carnivores  
B. The energy conversion efficiency of carnivores is better than herbivores  
C. Producers have the lowest energy conversion efficiency  
D. Energy conversion efficiency is the same in all trophic levels
32. What type of food chain is it?  
dead animals → blowfly maggot → maggots → frog → snake  
A. Detrital food chain B. Decomposer food chain  
C. Predator food chain D. Grazing food chain

**KHARAGPUR COLLEGE**  
**CERTIFICATE COURSE ON GREEN AUDIT-2022**

33. The natural place of an organism or community is known as  
A.Niche B.Biome C.Habitat D.Habit
34. A wide variety of living organisms is called:  
A.Biodiversity B. Population C.Habitat D.Diversity
35. What percentage of oxygen and carbon dioxide exists in the ecosystem?  
A.20.95% and 0.004% B.20.95% and 0.04% C.20.0% and 0.40% D.20.0% and 0.44%
36. Which is/are the abiotic components of an ecosystem?  
A.Soil B.Protein C.Carbon D.All of the above
37. On the basis of interaction of water molecules with soil, soil water can be classified into-  
A.1 B.2 C.3 D.4
38. Secondary Succession takes place on/in \_\_\_\_\_  
A.Degraded forests B. Newly created pond C.Newly cooled lava D. Bare rocks
39. . If 20 J of energy is trapped at producer level, then how much energy will be available to peacock as food in the following chain \_\_\_\_\_  
Plant > Mice > Snake > Peacock  
A.0.02 J B.0.2 J C.0.002 J D.0.0002 J
40. The term ecosystem was coined by \_\_\_\_\_  
A.Warming B.Tansle C.Odum D.Haeckel

## OUTCOME OF GREEN AUDIT COURSE

On successful completion of the course students will be able to:

1. Understand the concepts of Environmental health.
2. Identify different sources of Environmental pollution.
3. Demonstrate the Environmental audit process in industry and other project.
4. Understand various phases of Environmental audit.
5. Highlight Environmental law and policy.
6. Apply various methods of water conservation.
7. Apply various methods to control Environmental pollution.
8. Identify plant community.
9. Determine pH of water and soil.
10. Conserve biodiversity of any area.



# KHARAGPUR COLLEGE

## KHARAGPUR

ESTD. : 1949

P.O.– Inda, Kharagpur, Municipality– Kharagpur, Sub-Division– Kharagpur,  
P.S.– Kharagpur (T), Dist.– Paschim Medinipur, West Bengal, PIN– 721305.

Notice

Date: 08.04.2022

**Kharagpur College**  
**Kharagpur**  
**Notice for Certificate Course on Python Programming**

This is to inform all the students of the college that a certificate course on **Python Programming** will be organized by Department of Computer Science & BCA of the college tentatively on and from 11<sup>th</sup> May 2022. The course duration is 10 days (30 hours). Last date of registration for the course is 09<sup>th</sup> May, 2022. There is no Registration fee. Certificate of the course will be issued by Kharagpur College.

Interested students are advised to contact for registration and any other queries with the following teachers.

1. Prof. Alok Halder (Department of Computer Science & BCA)



① 08/04/22

Principal  
Kharagpur College

Principal  
Kharagpur College

**Kharagpur College**  
**Department of Computer Science & BCA**  
**Date of Commencement: 11.05.2022**  
**Class schedule for the Certificate Course on**  
**“Python Programming”**

Sl. No.	Topic	Resource Person	Theory/ Practical	Duration (Hours)	Date and time
1	Introduction	Prof. Alok Haldar	Both	3	11.05.2022
2	Introduction to Python	Prof. Anudyuti Ghorai	Both	3	12.05.2022
3	Elements of Python	Prof. Alok Haldar	Both	3	14.05.2022
4	Elements of Python	Prof. Anudyuti Ghorai	Both	3	17.05.2022
5	Conditional Statement	Prof. Anudyuti Ghorai	Both	3	19.05.2022
6	Control Statement	Prof. Alok Haldar	Both	3	21.05.2022
7	Sequential data types	Prof. Biswajit Laya	Both	3	01.06.2022
8	Functions and Modules	Prof. Biswajit Laya	Both	3	02.06.2022
9	File Handling	Prof. Subhadip Mukherjee	Both	3	06.06.2022
10	Data Visualization	Prof. Subhadip Mukherjee	Both	3	07.06.2022
11	Evaluation	Prof. Alok Haldar Prof. Anudyuti Ghorai	Practical	½	14.06.2022

*Alok Haldar 06/05/22*  
Alok Haldar  
Course Coordinator and Head,  
Department of Computer Science & BCA

*(B) 06/05/22*  
Principal  
Kharagpur College



*Principal*  
Kharagpur College

# Kharagpur College

Dept. Computer Science & BCA  
Certificate course on Python Programming

## Course Overview

This course covers Basic to Advanced topics of Python language.

**Entry Requirement** : (10 + 2) or equivalent qualified

**Course Duration** : 10 days (30 hrs.)

**Mode of Training** : Face to face Instructor led Training

## Course Content

<p><b>Module1:Introduction</b></p> <ul style="list-style-type: none"> <li>• Problem solving, Algorithm, flowchart</li> <li>• Types of language, translator</li> </ul>	<p><b>Module6:Control Statement</b></p> <ul style="list-style-type: none"> <li>• While loop</li> <li>• For loop</li> </ul>
<p><b>Module 2: Introduction to Python</b></p> <ul style="list-style-type: none"> <li>• Features of python</li> <li>• Application</li> <li>• Python installation</li> <li>• Python Shell, Python IDLE</li> <li>• Basic programming demo</li> </ul>	<p><b>Module7:Sequential data types</b></p> <ul style="list-style-type: none"> <li>• List</li> <li>• Tuples</li> <li>• Strings</li> <li>• Bytes and bytes array</li> <li>• Set</li> <li>• dictionary</li> </ul>
<p><b>Module3:Elements of Python</b></p> <ul style="list-style-type: none"> <li>• Python variables, Identifiers</li> <li>• Constants, literal, token, keyword</li> <li>• Data types</li> <li>• Operators: arithmetic, relational, logical</li> </ul>	<p><b>Module8:functions and modules</b></p> <ul style="list-style-type: none"> <li>• Function</li> <li>• Function declaration</li> <li>• Function definition</li> <li>• Function call</li> <li>• Function parameters</li> <li>• Return statement</li> <li>• Types of function parameters</li> </ul>
<p><b>Module4:Elements of Python</b></p> <ul style="list-style-type: none"> <li>• Operators: bitwise, Identity, membership</li> <li>• Operators Precedence and associativity</li> <li>• Expression in Python</li> </ul>	<p><b>Module9:File Handling</b></p> <ul style="list-style-type: none"> <li>• Introduction</li> <li>• File path</li> <li>• Types of files</li> <li>• Opening and closing files</li> <li>• File positions</li> <li>• Renaming and deleting files</li> </ul>
<p><b>Module5: Conditional statement</b></p> <ul style="list-style-type: none"> <li>• If</li> <li>• If - else</li> <li>• If -elif -else</li> <li>• Nested if</li> </ul>	<p><b>Module10:Data visualization</b></p> <ul style="list-style-type: none"> <li>• Matplotlib</li> <li>• Scatter plot</li> <li>• Line chart</li> <li>• Bar chart</li> <li>• Histogram</li> </ul>

*Alok Halder*

Alok Haldar

Course Coordinator and Head,  
Department of Computer Science & BCA



*6/09/22*

Principal  
Kharagpur College

Principal  
Kharagpur College

**Kharagpur College**  
**Dept. Computer Science & BCA**  
**Certificate course on Python Programming**

Date 14/06/2022

Time : 30 minutes      Full Marks-15

Answer all questions

1X 15 =15

1. The splitlines(), splits lines in strings on which characters?
  - a. Whitespace
  - b. Comma
  - c. Newline
  - d. Colon
2. Which slice operation will reverse the list?
  - a. Lists [ -1:: ]
  - b. Numbers [::-1 ]
  - c. Numbers [:-1:]
  - d. List [9:8:1]
3. Which operation is used for list cloning?
  - a. Assignment
  - b. Slice
  - c. Comparison
  - d. Repetition
4. Which data structure allows you to return multiple values from a function?
  - a. List
  - b. Tuple
  - c. Dictionary
  - d. Set
5. NumPy arrays can be created from \_\_\_\_\_?
  - a. Python list
  - b. Python tuples
  - c. Individual integers
  - d. All of these
6. Which function will be used to convert a tuple into a NumPy array?
  - a. np.array()
  - b. np.arange()
  - c. np.linspace()
  - d. np.flatten()
7. Which function is used to save the plot?
  - a. Saveplot()
  - b. savegraph()
  - c. savefig()
  - d. savedraw()
8. Default value of histtype in the hist() function is \_\_\_\_\_
  - a. Bar
  - b. Barstacked
  - c. Step
  - d. Stepfilled()

9. Which argument of the sort function applies changes in the data frame passed to the function?
- Kind
  - Na\_position
  - Inplace
  - Axis
10. Arbitrary arguments have which symbol in the function definition before the parameter name?
- &
  - #
  - %
  - \*
11. Modules are files saved with \_\_\_\_\_ extension.
- .py
  - Mod
  - Mdl
  - Imp
12. What is the output of this code?
- ```
import random as r
print(random.randomint(1, 10 ))
```
- An error occurs
  - 1
  - 10
  - any random number
13. This imports \* statement import all names in the module except those beginning with \_\_\_\_\_
- %
  - \$
  - \_
  - !
14. If List = [1,2,3,4,5,6,7,8,9,10] then print List [8:4:-1] will give
- [2,3,4,5]
  - [9,8,7,6]
  - [6,7,8,9]
  - [5,4,3,2]
15. Which function returns a tuple of two values?
- divmod()
  - input()
  - eval()
  - tuple()

**Certificate course on *Python Programming***

***Award List***

***Date of Examination: 14.06.2022***

***Total Marks:15***

| SL. NO | ROLLNO | STUDENT NAME                | MARKS  |
|--------|--------|-----------------------------|--------|
| 1      | 002    | ABHISHEK SHARMA             | 14     |
| 2      | 003    | ABIR MAITY                  | 11     |
| 3      | 004    | AJIT SAREN                  | 13     |
| 4      | 005    | ANIRBAN DAS                 | 13     |
| 5      | 006    | ANOMITRA KAR                | 12     |
| 6      | 007    | ANUVAB SAHU                 | 12     |
| 7      | 009    | AVIJIT SUI                  | 12     |
| 8      | 010    | AYAN BISWAS                 | 14     |
| 9      | 011    | AYON MONDAL                 | 12     |
| 10     | 012    | B SRUTHI                    | ABSENT |
| 11     | 014    | BHIM HANSDA                 | 12     |
| 12     | 017    | DEEPAK SINGH                | 11     |
| 13     | 018    | DIPAYAN CHOWDHURY           | 14     |
| 14     | 019    | HIMANSHU RAY                | 10     |
| 15     | 020    | JEET GOPE                   | 11     |
| 16     | 021    | JOY DUTTA                   | 13     |
| 17     | 022    | KARAN NATH MAHAPATRA        | 12     |
| 18     | 023    | KOUSHIK SINGHA<br>MAHAPATRA | 11     |
| 19     | 024    | KUMARJIT MONGAL             | 14     |
| 20     | 025    | KUNAL MONDAL                | 12     |
| 21     | 026    | MANOJIT RAUL                | 11     |
| 22     | 027    | PARTHIB HALDAR              | 13     |
| 23     | 029    | PUJA DAS                    | 12     |
| 24     | 030    | PUSKAR GHOSH                | 11     |
| 25     | 031    | RAHUL KUIRY                 | 13     |
| 26     | 032    | RAHUL SINGHA                | 14     |
| 27     | 033    | RAJA DAS                    | 11     |
| 28     | 034    | SANDIP KUMAR KUNDU          | 10     |
| 29     | 035    | SAYANDIP BOXI               | 13     |

| SL. NO | ROLLNO | STUDENT NAME         | MARKS |
|--------|--------|----------------------|-------|
| 30     | 036    | SHREYA RANI DE       | 14    |
| 31     | 037    | SHREYA UPADHYAY      | 12    |
| 32     | 038    | SHREYASI SARKAR      | 11    |
| 33     | 039    | SK AFTAB             | 10    |
| 34     | 040    | SK RAKIUR RAHAMAN    | 13    |
| 35     | 041    | SOMNATH BANERJEE     | 14    |
| 36     | 044    | SUBHASH CHANDRA ADAK | 14    |
| 37     | 046    | SUDIPTA KOTAL        | 12    |
| 38     | 047    | SUJIT HEMBRAM        | 14    |
| 39     | 048    | SUMAN MANDAL         | 12    |
| 40     | 049    | SUNIL BISUI          | 13    |
| 41     | 050    | SUPRIYO KUNDU        | 14    |
| 42     | 052    | ZIAN NAWAZ           | 12    |

Alok Halder . 14/06/22

Alok Halder,  
Assistant Professor & Head,  
Course Coordinator,  
Department of Computer Science & BCA

**SUMMARY REPORT ON  
CERTIFICATE COURSE ENTITLED  
“Python Programming”**

**Organised by  
*Department of Computer Science & BCA  
Kharagpur College***

**DATE: From 11.05.2022 to 14.06.2022**

**DURATION: 10 Days (30 Hours)**

**Coordinator: Prof. Alok Haldar, Assistant Professor and Head,  
Department of Computer Science & BCA,  
Kharagpur College**

Computer Proficiency is an essential part of modern education. The certificate course is designed to provide UG students with a solid foundation in basic computer knowledge, concepts and techniques of Python Programming which can lead to improve job prospects and career advancement opportunities. The course also provides a strong foundation for further study in computer and related fields like web development, data science, artificial intelligence and machine learning.

The course aims to prepare the undergraduate and post graduate students of different streams like BCA, science etc. with basic abilities as well as hands-on experience in python programming.

Course Objectives can be listed as below:

- To Provide the fundamentals of writing Python scripts
- To learn core Python scripting elements such as variables and flow control structures
- To discover how to work with lists and sequence data
- To write Python functions to facilitate code reuse
- To provide their code robust by handling errors and exceptions properly
- Work with the Python standard library
- To be explore Python's object-oriented features

**Taught by:**

1. Prof. Alok Haldar, Assistant Professor and Head, Department of Computer Science & BCA, Kharagpur College
2. Mr. Anudyuti Ghorai, State Aided College Teacher, Department of Computer Science & BCA, Kharagpur College
3. Mr. Subhadip Mukherjee, State Aided College Teacher, Department of Computer Science & BCA, Kharagpur College
4. Mr. Biswajit Laya, State Aided College Teacher, Department of Computer Science & BCA, Kharagpur College

KHARAGPUR COLLEGE

DEPARTMENT OF CHEMISTRY

Certificate Course on "Chemistry in Forensic Science (30 HRS)"

Date: 01.03.2022

This is to inform to all 2<sup>nd</sup> & 4<sup>th</sup> Semester Chemistry Honours students, a certificate course of duration of 30hrs will be conducted by Department of Chemistry from 7<sup>th</sup> March 2022 onwards on above mentioned topic. Interested students are requested to contact the course coordinators for enrollment. The detailed course schedule will be intimated in due course of time.

Course Fee: Rs. 100/-

Course Coordinators: Dr. Forid Saikh, Asst. Professor, Dept. of Chemistry

Smt. Kuheli Pramanik, Asst. Professor, Dept. of Chemistry

 01/03/2022

(Dr. Bidyut Samanta)

Principal

Kharagpur College

*Principal*

Kharagpur College

## SUMMARY REPORT OF THE CERTIFICATE COURSE

**Topic of the Certificate Course: Chemistry in Forensic Science**

**Organized by: Department of Chemistry, Kharagpur College.**

**Duration: 7<sup>th</sup> March, 2022 to 17<sup>th</sup> March, 2022 (duration: 30 hrs).**

**Participants:** Thirty six (37) students of B.Sc (Chemistry Honours), Kharagpur College.

**Nature of delivery:** Theoretical.

**Resource Persons:** Ten (10) resource persons were involved in the course.

**Co-ordinators:** : Dr. Forid Saikh, Asst. Professor, Dept. of Chemistry, Smt. Kuheli Pramanik, Asst. Professor, Dept. of Chemistry

**Areas covered:** This certificate course covered some fundamental topics related to forensic science. Analytical Chemistry, Instrumental Techniques and Evidence Analysis was the major part of the focused course. Besides there are some topics like ethics and law, DNA analysis and explosion investigation in point of view of Chemistry also covered.

**Course outcome:** The course has been especially meant to make the students aware of the huge openings of the subject and also the challenges to be faced therein. During the tenure of the course discussions on different topics like analytical chemistry, instrumental chemistry, biological sampling, DNA analysis and fire & explosion investigation was elaborated. Students can differentiate forensic Chemistry and general Chemistry from the certificate course. Students first time learned the application of Chemistry in Forensic Science.

*Forid Saikh*

(Dr. Forid Saikh)  
Assistant Professor, Department of  
Chemistry  
Kharagpur College  
Jt. Coordinator

*Kuheli Pramanik*

(Smt. Kuheli Pramanik)  
Associate Professor, Department of  
Chemistry  
Kharagpur College  
Jt. Coordinator

Certificate course on “**Chemistry in Forensic Science**” organized by the department of Chemistry, Kharagpur College from 7<sup>th</sup> March 2022 onwards

### Syllabus Distribution

| Sl no. | Dates    | Topics                                       | Name of Teacher          | Lecture hours |
|--------|----------|----------------------------------------------|--------------------------|---------------|
| 1      | 07.03.22 | Introduction of forensic science             | Dr. Forid Saikh          | 2             |
| 2      |          | Principle of Analytical Chemistry-I          | Sri Prasananna Duley     | 2             |
| 3      | 08.03.22 | Ethics and Legal Aspects of Forensic Science | Dr. Gagan Ch. Mandal     | 3             |
| 4      |          | Principle of forensic science                | Sri Kalyan Sur           | 2             |
| 5      | 09.03.22 | Principle of Analytical Chemistry-II         | Smt. Laboni Giri         | 2             |
| 6      | 10.03.22 | Techniques and Instrumentations-I            | Sri Sanjoy Kumar Bera    | 3             |
| 7      |          | Forensic Toxicology-I                        | Smt. Kuheli Pramanik     | 2             |
| 8      | 11.02.22 | Forensic Toxicology-II                       | Smt. Kuheli Pramanik     | 2             |
| 9      |          | Chemical Analysis of Evidence-I              | Dr. Sumit Kr. Ray        | 2             |
| 10     | 14.03.22 | Forensic DNA analysis                        | Dr. Subhra Mishra        | 3             |
| 11     | 15.03.22 | Techniques and Instrumentations-II           | Dr. Indranil Chakroborty | 2             |
| 12     | 16.03.22 | Chemical Analysis of Evidence-II             | Dr. Forid Saikh          | 2             |
| 13     | 17.03.22 | Fire and explosion Investigation             | Dr. Sumit Kr. Ray        | 3             |

Course Coordinators: Dr. Forid Saikh, Asst. Professor, Dept. of Chemistry  
Smt. Kuheli Pramanik, Asst. Professor, Dept. of Chemistry

6/01/03/2022  
Dr Bidyut Samanta  
Principal  
Kharagpur College

Principal  
Kharagpur College

**Question paper for final evaluation of  
Certificate Course on Chemistry: Chemistry in Forensic Science  
Department of Chemistry, Kharagpur College**

**F.M.: 30**

**Time: 1 hour**

**Date: 21.03.22**

**Answer any 10 questions (each question carries 03 marks)**

1. What is forensic chemistry?
2. How does forensic chemistry differ from general chemistry?
3. Explain the role of analytical chemistry in forensic science?
4. How is the principle of chromatography applied in forensic investigations?
5. How is IR spectroscopy used to identify substances in forensic cases?
6. Outline the steps to detect a toxic substance in a biological sample?
7. What are the main steps in the process of DNA profiling?
8. Explain how forensic chemists analyse paint samples from a crime scene?
9. What methods are used to identify hair and fiber evidence?
10. What chemical reactions are involved in combustion?
11. Describe the forensic techniques used to identify explosive residues?
12. What are the challenges in distinguishing between accidental and intentional fire?
13. Discuss the ethical responsibilities of forensic chemists when handling evidence?
14. How can forensic chemists ensure their findings are admissible in court?