

University of Kalyani

Directorate of Open & Distance Learning

Kalyani – 741235, Nadia, West Bengal, India Phone: 033-2502-2212, E-mail: <u>dodl@klyuniv.ac.in</u> Website: www.dodlklyuniv.ac.in

Prof. Tapati Chakraborti, M.Sc., Ph.D. **Director**

Ref. No. KU/DODL/69/22 **Dated:** 24.03.2022

<u>NOTIFICATION</u> For M.A. and M.Sc. Semester-I 2021-22 Assignment with Rules and General Guidelines

This is for information to the students of **M.A. & M.Sc.- Semester-I -2021-22 under Directorate of Open & Distance Learning (DODL)**, are hereby instructed to write and submit the **Internal Assignments** on and from **27/03/2022**. Assignment submission related prescribed rules and general guidelines are stated below:

- The given Assignments Marks are mentioned in question paper for each subject (1st Internal and 2nd Internal). The students are advised to carefully abide by all the instructions given in their Assignment Questions.
- 2) The students of the KU Main Campus are directed to submit the assignments, prepared only in **PDF format or document Cloud** (paper-wise separately), to the official e-mail id(s) (provided below) of their respective departments.*
- 3) The students should write and submit the answer script from their respective residences. They are strictly advised to write the Assignments in their own words. Moreover, the Assignments have to be hand-written.
- 4) The students have to use A4 size blank sheets to write the Assignments. They must mention their Name, Study Centre Name, Subject, AIN Number in the very first page of the Assignments for each paper. Secondly, they need to write the individual AIN Numbers as well as the Page Numbers in all the pages.
- 5) The **"Subject"** of the e-mail will be the **AIN Number and the Name of the Subject** The **"name"** of the individual PDF(s) will be the **paper name**.
- 6) The last date of submission is 10/04/2022 for Zoology, Mathematics, Geography and 25.04.2022 for Bengali, History. The students should send their Assignments only in the provided e-mail id(s) and any other kind of submission will be summarily rejected.
- 7) The students of the different Study Centres under Directorate of Open & Distance Learning, University of Kalyani will submit the same Assignments to their Study Centres as per their instruction. They are also advised to contact the respective authorities' in-charge of the respective study centre for any further information.
- 8) The Internal Assignment Questions and submission dates for M.Sc. in Botany, M.A. in History and M.A. English will be notified shortly.

Sd/-(Prof. Tapati Chakraborti) Director, DODL University of Klaynai The list of the subject wise official E-mail addresses, where only the <u>KU Main Campus candidates</u> of M.A. and M.Sc. Semester-I, 2021-22 will send their Internal Assignments are given below:

Subject		Mail ids	Last date for submission Internal Assignments	
M.A. in	Candidates Name starting with Alphabet: A to O	bengali2dodl@klyuniv.ac.in	25.04.2022	
Bengali	Candidates Name starting with Alphabet: P to Z	bengali3dodl@klyuniv.ac.in	23.04.2022	
M.A. in Education	Candidates Name starting with Alphabet: A to P	education1dodl@klyuniv.ac.in	25.04.2022	
	Candidates Name starting with Alphabet: Q to Z	education2dodl@klyuniv.ac.in		
M.Sc. in Zoology M.Sc. in Mathematics		zoology1dodl@klyuniv.ac.in	10.04.2022	
		mathematics1dodl@klyuniv.ac.in	10.04.2022	
M.A./M.Sc. in Geography	GEO/CC/T-101 & GEO/CC/T-103	geography1dodl@klyuniv.ac.in	10.04.2022	
	GEO/CC/T-102 & GEO/CC/T-104	geography2dodl@klyuniv.ac.in	1010712022	

Sd/-(Prof. Tapati Chakraborti) Director, DODL University of Klaynai কল্যাণী বিশ্ববিদ্যালয় মুক্ত ও দূরবর্তী শিক্ষা অধিকরণ ২০২২ স্নাতকোত্তর প্রথম সেমেস্টার বিষয় : বাংলা (Assignment)

প্রতিটি পত্র থেকে দুটি করে প্রশ্নের উত্তর দাও :

প্রতিটি প্রশ্নের মান – ০৫

পত্র – B – CORE - 101

১। শ্রীকৃষ্ণকীর্তন কাব্যের নাট্যলক্ষণগুলি আলোচনা করো।

অথবা

ধর্মঠাকুরের উৎস বিষয়ক বিবিধ ধারণাগুলি সম্পর্কে আলোকপাত করো।

২। জয়ানন্দের 'চৈতন্যমঙ্গল' কাব্যের বিশিষ্টতা আলোচনা করো।

অথবা

'গোবিন্দদাস দ্বিতীয় বিদ্যাপতি' – কথাটির তাৎপর্য ব্যাখ্যা করো।

পত্র – B – CORE - 102

১। ঊনবিংশ শতাব্দীর বাংলা গদ্যের বিকাশে ফোর্ট উইলিয়াম কলেজের অবদান সংক্ষেপে আলোচনা করো ।

অথবা

বাংলা সাময়িক পত্রিকার ইতিহাসে 'বঙ্গদর্শন' পত্রিকার গুরুত্ব সম্পর্কে যা জান লেখ ।

২। নাট্যকার গিরিশচন্দ্র ঘোষ সম্পর্কে আলোকপাত করো ।

প্রাবন্ধিক রবীন্দ্রনাথ সম্পর্কে সংক্ষেপে আলোচনা করো ।

পত্র – B – CORE – 103

১। রেখচিত্রসহ বাগ্যন্ত্রের উল্লেখযোগ্য অংশগুলির বিবরণ দাও।

অথবা

বাংলা ভাষায় অনার্য প্রভাব এ বিষয়ে একটি সংক্ষিপ্ত নিবন্ধ রচনা করো।

২। গণমাধ্যমের ভাষা সম্পর্কে একটি সংক্ষিপ্ত টীকা রচনা করো।

অথবা

কোনো ভাষাকে IPA তে রূপান্তরিত করার শর্তগুলি বিশ্লেষণ করো।

পত্র – B – CORE – 104

১। চর্যাগীতিগুলির সাহিত্যমূল্য নির্ধারণ করো ।

অথবা

'শ্রীকৃষ্ণকীর্তন' কাব্যের আবিষ্কারক, আবিষ্কার, রচনাকাল সম্পর্কে সংক্ষেপে লেখো ।

২। 'প্রার্থনা'-বিষয়ক পদরচনায় বিদ্যাপতির শ্রেষ্ঠত্বের পরিচয় দাও ।

অথবা

মুকুন্দ চক্রবর্তীর 'চণ্ডীমঙ্গল' কাব্যের রচনাকাল সম্পর্কে আলোচনা করো ।

DIRECTORATE OF OPEN AND DISTANCE LEARNING (DODL) UNIVERSITY OF KALYANI KALYANI, NADIA

M.A. in Education 1st Semester, 2021-22 Assignment Questions Attempt *One* question from each Internal Each question carries 10 Marks

Educational Philosophy (COR-101)

1st Internal

1. Explain Yoga School of philosophy with special reference to their educational implications.

10

10

Or

Describe briefly the Islamic Tradition School of philosophy with special reference to their educational implications.

2nd Internal

Expound on Idealism with special reference to aims, curriculum &method of teaching. 10
 Or
 Discuss the educational philosophy of Dewey and comment on its significance to education.
 5+5=10

Educational Psychology (COR-102)

1st Internal

1. Describe the various laws of perceptions according to Gestalt School of Psychology.

10OrCritically analyze the Cognitive School of Psychology.10

2nd Internal

1. Explain with suitable examples different types of learning problems.	10
Or	
Relate "Level of aspiration" and Motivation to one's "Self Concept".	
	5+5=10

Educational Sociology (COR-103)

<u>1st Internal</u>

1. Analyse different types of Social-Movements Theory.

Or

What do you mean by modernization? Discuss the impact of modernization on education.

3+7=10

2nd Internal

1. Briefly analyze the different types of groups in society.

Or

Discuss the causes of population growth in India and briefly analyze the effects of population growth on society. 5+5=10

Research Methodology (COR-104)

<u>1st Internal</u>

1. Critically analyse different types of educational research with suitable examples.	10
Or	
Define the phrase 'Review of Related Studies' and describe its importance in educational research.	10
<u>2nd Internal</u>	
1. Explain non-probability types of sampling.	10
Or	
Write a brief note on levels of measurement.	10

10

Internal Assignment Examinations of ZOOLOGY (2021-23) Directorate of Open and Distance Learning University of Kalyani

Date: 27.03.2022

	FIRST INTERNAL ASSIGNMENT						
Paper Code	Questions	Total marks (7)	Last Date of Submission	e-mail address			
ZCORT 101	What is pellicle? Describe the electron microscopic structure of pellicle with diagram. OR ,	2+5 =7					
	Write down the characteristics of Phylum Protozoa. Write a short note on Cell Association and Cellular Differentiation in Protozoa.						
ZCORT 102	Discuss the systematic position of <i>Paramoecium.</i> Discuss the characteristics of phylum platyhelminthes. OR ,	2+5 =7	10.04.2022	zoology 1dodl@			
	Discuss the trophozoit structure of <i>Entamoeba histolytica</i> . Elaborate the Symptoms of <i>Schistosoma</i> sp.	3+4=7					
ZCORT 103	What is acrosomal reaction? Discuss different steps of acrosomal reaction with diagram. OR ,	2+5 =7	10.04.2022	klyuniv. ac.in			
	How methylation, acetylation and phosphorylation affect DNA-histone association? What is linker DNA?	6+1 =7					
ZCORT 104	Discuss the steps of Mevalonate formation from Acetyl CoA. Discuss basic structure of	5+2 =7					
	Cholesterol with diagram. OR, What is electrical synapse? How synaptic	1+6 =7					
	transmission carried out in chemical synapse?	1+0 =7					

Date: 27.03.2022

	SECOND INTERNAL ASSIGNMENT						
Paper Code	Questions	Total marks (7)	Last Date of Submission	e-mail address			
ZCORT 101	Discuss prognothus type of head with diagram? Describe the structural component of insect head with diagram.	2+5 =7					
	OR,What do you mean by epicuticle? Write a short note on Oenocyte cell. Describe the functions of integument.2+2+3=7						
ZCORT 102	What do you mean by producer? Describe the Gaia hypothesis.What is entropy and enthalpy?	1+3+3=7					
	OR, Define Biome. Describe the flora and fauna of desert.	2+5=7		zoology			
ZCORT 103	What is G0 stage? What is APC/C complex? How it helps in chromatid segregation?	1+2+4 =7	1dodl@ klyuniv. ac.in				
	OR, Discuss how dorsal and ventral side is determined in Drosophila with suitable diagram.	5+2 =7					
ZCORT 104	What is disulphide bond? Which amino acid forms this? Why methionine cannot form disulphide bond but	2+1+2+1 +1 =7					
	cysteine can form? What is peptide bond? How it is formed? OR, Discuss different steps of urine formation with suitable diagram.	5+2 =7					

NB:

- Assignment should be sent through e-mail only. DO NOT send it by any other mode. Otherwise it will not be evaluated.
- Assignment should be sent in PDF format only. For Each paper, make separate PDF file. The name of the PDF file should be the Paper's name.

Internal Assignment of M. Sc. in Mathematics, Semester : I, Session : 2021-23 Directorate of Open and Distance Learning, University of Kalyani

INSTRUCTIONS

- 1. Write your answers in clean A4 papers in a legible handwriting.
- 2. Write your name and AIN number on each page of your answer script.
- 3. Scan your answer sheets using any standard scanning application and prepare a single PDF file containing the answers of the two internals.
- 4. Name the PDF file as the last 4 digits of your AIN followed by your name. For example if your name is Aranya Roy with last 4 digits of AIN number 1234, then the name of your PDF file will be 1234-aranya-roy.
- 5. Send your prepared pdf file to mathematics1dodl@klyuniv.ac.in positively on or before 10-04-2022.
- 6. Send your mail only once. Multiple emails won't be entertained. In case of multiple mail, the first mail will be considered for final evaluation.

Best wishes for your exam.

FIRST INTERNAL

COR 1.1 (Pure and Applied Streams)

Answer any two of the following questions:

 $2 \times 3.5 = 7$

 $2 \times 3.5 = 7$

- 1. Show that for any three cardinal numbers m, n and p, $(m^n)^p = m^{np}$.
- 2. Show that a function $f : [a, b] \to \mathbb{R}$ is of bounded variation if and only if it can be represented as the difference of two monotonically increasing functions on [a, b].
- 3. With proper reasoning, show that a function f can be continuous without being absolutely continuous.

COR 1.2 (Pure and Applied Streams)

Answer **any two** of the following questions:

1. Let y_1 and y_2 be two solutions of the problem

$$y''(t) + ay'(t) + by(t) = 0, \ t \in \mathbb{R}$$

 $y(0) = 0$

where a and b are real constants. If w be the Wronskian of y_1 and y_2 , then show that $w(t) = 0, \forall t \in \mathbb{R}$.

- 2. Consider the equation y'' y' 2y = 0.
 - a) Show that $y_1(t) = e^{-t}$ and $y_2(t) = e^{2t}$ form a fundamental set of solutions.
 - b) Let $y_3(t) = -2e^{2t}$, $y_4(t) = y_1(t) + 2y_2(t)$, and $y_5(t) = 2y_1(t) 2y_3(t)$. Are $y_3(t)$, $y_4(t)$, and $y_5(t)$ also solutions of the given differential equation?
 - c) Determine whether each of the following pairs forms a fundamental set of solutions: $\{y_1(t), y_3(t)\}; \{y_2(t), y_3(t)\}; \{y_1(t), y_4(t)\}; \{y_4(t), y_5(t)\}.$
- 3. Show that the solution of the boundary value problem

$$-(y'' + y) = f(x), \quad y(0) = 0, \ y(1) = 0$$

is

$$y = \int_{0}^{1} G(x,s) f(s) ds,$$

where

$$G(x,s) = \begin{cases} \frac{\sin s \, \sin(1-x)}{\sin 1}, & 0 \le s \le x, \\ \frac{\sin x \, \sin(1-s)}{\sin 1}, & x \le s \le 1. \end{cases}$$

COR 1.3 (Pure and Applied Streams)

Answer any two of the following questions:

- 1. Briefly discuss the meaning and importance of the lower and upper bound while solving an integer programming problem using the bound in the branch and bound method.
- 2. Find the sequence that minimizes the total time in hours required to complete the following task:

Tasks:	А	В	С	D	Е	F	G
Machine I:	3	8	7	4	9	8	7
Machine II	4	3	2	5	1	4	3
Machine III	6	7	5	11	5	6	12

What is the minimum elapsed time?

3. Let S be a finite G-set, where G is a group of order p^n (p a prime). Let $S_0 = \{a \in S | ga = a \text{ for all } g \in G\}$. Show that $|S| \equiv_p |S_0|$.

DSE 1.4 (Applied Stream)

Answer **any two** of the following questions:

 $2 \times 3.5 = 7$

1. State and proof Cauchy's fundamental theorem for stress.

 $2 \times 3.5 = 7$

2. Sketch the Mohr's circles and determine the maximum shear stress for the stress state

$$\sigma_{ij} = \begin{bmatrix} \tau & 0 & 0 \\ 0 & -\tau & 0 \\ 0 & 0 & -2\tau \end{bmatrix}$$

3. In the absence of body forces, do the stress components

$$\tau_{xx} = \alpha [y^2 + \nu (x^2 - y^2)], \quad \tau_{yy} = \alpha [x^2 + \nu (y^2 - x^2)]$$
$$T_{zz} = \alpha \nu [x^2 + y^2], \quad T_{xy} = -2\alpha \nu xy$$
$$T_{yz} = T_{zx} = 0$$

satisfy the equations of equilibrium?

DSE 1.4 (Pure Stream)

Answer **any two** of the following questions:

 $2 \times 3.5 = 7$

1. Find the speed of the following parametrised curve.

$$\gamma(t) = \left(\frac{1}{3}(1+t)^{3/2}, \frac{1}{3}(1-t)^{3/2}, \frac{t}{\sqrt{2}}\right).$$

- 2. If γ is a unit speed curve in \mathbb{R}^3 , and t is its unit tangent vector, then show that \dot{t} remains unchanged under unit-speed reparametrisations.
- 3. Define the curvature of a regular curve in \mathbb{R}^3 . Find the curvature of $\gamma(t) = (t, \cosh t)$.

COR 1.1 (Pure and Applied Streams)

Answer any two of the following questions:

1. Evaluate the integral $\int_0^{10} f d\alpha$, where f(x) = x and $\alpha(x) = x + [x]$.

- 2. Show that any two norms on a finite dimensional linear space are equivalent.
- 3. Is every normed linear space complete? Justify.

COR 1.2 (Pure and Applied Streams)

Answer any two of the following questions:

 $2 \times 3.5 = 7$

 $2 \times 3.5 = 7$

1. Show that the eigenvalues of the boundary value problem

$$\begin{aligned} &\frac{d^2y}{dx^2} + \lambda y = 0, \quad x \in (0,\pi), \ \lambda > 0, \\ &y(0) = 0, \quad y(\pi) - \frac{dy}{dx}(\pi) = 0, \end{aligned}$$

are given by $\lambda = k_n^2$, where k_n , n = 1, 2, 3, ... are the roots of $k - \tan(k\pi) = 0$.

2. If u(x, y) is the solution of the Cauchy problem

$$x\frac{\partial u}{\partial x} + \frac{\partial u}{\partial y} = 1, \quad u(x,0) = -x^2, \ x > 0$$

then find the value of u(2, 1).

3. Consider the PDE

$$P(x,y)\frac{\partial^2 u}{\partial x^2} + e^{x^2}e^{y^2}\frac{\partial^2 u}{\partial x\partial y} + Q(x,y)\frac{\partial^2 u}{\partial y^2} + e^{2x}\frac{\partial u}{\partial x} + e^y\frac{\partial u}{\partial y} = 0,$$

where P and Q are polynomials in two variables with real coefficients. Show that for all choices of P and Q there exists R > 0 such that the PDE is hyperbolic in $\{(x, y) \in \mathbb{R}^2 : x^2 + y^2 > R\}$.

COR 1.3 (Pure and Applied Streams)

Answer any two of the following questions:

 $2 \times 3.5 = 7$

1. Consider the following convex programming problem

Maximize
$$f(X) = 10x_1 - 2x_1^2 - x_1^3 + 8x_2 - x_2^2$$
,
subject to $x_1 + x_2 \le 2$,
 $x_1, x_2 \ge 0$.

Use the Kuhn-Tucker conditions to demonstrate that $(x_1, x_2) = (1, 1)$ is not an optimal solution.

- 2. Let G be a group and H and K be subgroups of G such that $G = H \times K$. Show that $G/H \simeq K$.
- 3. Show that a group of order 15 is commutative.

DSE 1.4 (Applied Stream)

Answer any two of the following questions:

- 1. Proof equivalency of the equation of continuity in Lagrangian and Eulerian method.
- 2. The strain tensor at a point is given by

$$E_{ij} = \begin{bmatrix} a & b & 0 \\ b & -a & 0 \\ 0 & 0 & 0 \end{bmatrix}$$

Find principal axes of strain and corresponding direction ratios of principal strain.

3. A velocity field is specified in Lagrangian form by $v_1 = -X_2e^{-t}$, $v_2 = -X_3$, $v_3 = 2t$. Determine acceleration components in Eulerian form.

DSE 1.4 (Pure Stream)

Answer any two of the following questions:

1. Show that the curve

$$\gamma(t) = \left(\frac{1+t^2}{t}, t+1, \frac{1-t}{t}\right)$$

is planar.

- 2. Show that the ellipse $\gamma(t) = (a \cos t, b \sin t)$ where a and b are positive constants, is a simple closed curve and compute the area of its interior.
- 3. Let X be a non-empty set. Show that the intersection of any arbitrary collection of topologies on X is a topology on X.

 $2 \times 3.5 = 7$

 $2 \times 3.5 = 7$

NOTIFICATION

For M.A./M.Sc. Geography Semester I (2021-23)

This is for information to the students of M.A./M.Sc. Geography Semester I (2021-23) under the Directorate of Open & Distance Learning (DODL), University of Kalyani, that as per the revised syllabus prescribed under the CBCS mode, are hereby instructed to write and submit Internal Assignments from each paper on or before 10/04/2022. Assignment submission related prescribed rules and general guidelines are stated below:

- 1. The given Assignments will carry 20% weightage of the total marks in each paper. The students are advised to carefully abide by all the instructions given in their Assignment Questions.
- 2. The students are directed to submit the assignments only in PDF to the official e-mail ids provided below.
- 3. The students should write and submit the answer script from their respective residences. They are strictly advised to write the assignments in their own words. Moreover, the assignments have to be hand-written.
- 4. The students have to use A4 size blank sheets to write the assignments. They must mention their Name, Subject, Semester, AIN Number in the first page of the assignments. Secondly, they need to write the individual AIN Number as well as the Page Numbers in all the pages.
- 5. The "Subject" line of the e-mail will be the name of the candidate.
- 6. The last date of submission is 10/04/2022. The students should send their assignments only in the provided e-mail ids and any other kind of submission will be summarily rejected.
- 7. Students are also advised to send the assignment from their own email Id within due date.
- 8. Merge all the internal papers of first and second assignment (GEO/CC/T-101 & GEO/CC/T-103) in a single file and merge all the internal papers of first and second assignment (GEO/CC/T-102 & GEO/CC/T-104) in a single file, and send accordingly.

Paper Code:	Email ID:
GEO/CC/T-101 & GEO/CC/T-103	geography1dodl@klyuniv.ac.in
GEO/CC/T-102 & GEO/CC/T-104	geography2dodl@klyuniv.ac.in

2022 GEOGRAPHY (DODL) Semester I: - First Assignment Paper Code: GEO/CC/T-101 Paper: Geotectonics, Geomorphology and Hydrology

The figures in the right hand margin indicate marks. Candidates are required to give their answers in their own words as far as practicable. Answer any one question

1. Give an account of the different types of plate movements and resultant landforms.	5
2. Elaborate the different types of equilibrium in geomorphology.	5

2022 GEOGRAPHY (DODL) Semester I First Assignment Paper Code: GEO/CC/T-102 Paper: Climatology

The figures in the right hand margin indicate marks. Candidates are required to give their answers in their own words as far as practicable. Answer any one question

1.	Discuss thermodynamic system with the reference of adiabatic system.	5
2.	How global climate gets influenced by Jet stream?	5

2022 GEOGRAPHY (DODL) Semester I First Assignment Paper Code: GEO/CC/T-103 Paper: Soil and Biogeography

The figures in the right hand margin indicate marks. Candidates are required to give their answers in their own words as far as practicable. Answer any one question

1. Highlight the salient features of the soil classification system of USDA.	5
2. Discuss the role of nitrogen in the growth of plant.	5

2022 GEOGRAPHY (DODL) Semester I First Assignment Paper Code: GEO/CC/T-104 Paper: Geographical Thought

The figures in the right hand margin indicate marks. Candidates are required to give their answers in their own words as far as practicable. Answer any one question

1. Discuss the contribution of Humboldt in Geographical research.	5
2. Distinguish between ideographic and nomothetic approaches.	5

2022 GEOGRAPHY (DODL) Semester I: - Second Assignment Paper Code: GEO/CC/T-101 Paper: Geotectonics, Geomorphology and Hydrology

The figures in the right hand margin indicate marks. Candidates are required to give their answers in their own words as far as practicable. Answer any one question

Full Marks: 5

1. Discuss the view of L.C. King on the evolution of slope.	5
The bise was the field of Electricing on the evolution of bioper	-

2. Highlight the application of Normalized Difference Vegetation Index (NDVI) in drought analysis.

2022 GEOGRAPHY (DODL) Semester I Second Assignment Paper Code: GEO/CC/T-102 Paper: Climatology

The figures in the right hand margin indicate marks. Candidates are required to give their answers in their own words as far as practicable. Answer any one question

1. Explain the interrelationship between El-Nino and La-Nina.	5
2. Describe the classical concept of Monsoon genesis.	5

2022 GEOGRAPHY (DODL) Semester I Second Assignment Paper Code: GEO/CC/T-103 Paper: Soil and Biogeography

The figures in the right hand margin indicate marks. Candidates are required to give their answers in their own words as far as practicable. Answer any one question

1. Give an account of the adaptation measures of plants on the basis of availability of water.	5
2. Highlight the different means of animal migration.	5

2022 GEOGRAPHY (DODL) Semester I Second Assignment Paper Code: GEO/CC/T-104 Paper: Geographical Thought

The figures in the right hand margin indicate marks. Candidates are required to give their answers in their own words as far as practicable. Answer any one question

1. Write a short note on Eco-feminism.	5
2. Explain the system approach in geographical studies.	5