

PG FIRST SEMESTER EXAMINATIONS, 2025
DEPARTMENT OF GEOGRAPHY & APPLIED GEOGRAPHY
JALPAIGURI CAMPUS
UNIVERSITY OF NORTH BENGAL
GENERAL PRACTICAL
CODE: GEOGEP0101A

Time: 4 hours

Full Marks: 75

Answer all the questions

1. Detect the duplicate BOD values in the column B of given MS Excel sheet and delete them by using excel tool and write the steps you have followed to do the same. 16
2. Outline the steps to create a Dot Plot in Excel for a dataset representing the life expectancy of women in African countries for 2025. What steps are followed to insert a 45° line of equality when drawing a Lorenz curve in Excel? 4+2=6
3. Draw neat graticules on Polar Zenithal Stereographic Projection by using the following data and derive formula for mathematical calculation of radius of any parallel, ϕ with suitable diagrams. 11
 Extension: Southern Hemisphere
 Interval: 15°
 RF = 1: 162 M
g. R. Down / $\frac{90^\circ - \phi}{2}$
4. The following reading were obtained during a Theodolite Closed Traverse survey PQRSTP. Prepare a Gale's Traverse Table and plot the Traverse with a suitable scale. All WCBs are to be considered as the F. B. of the respective line. 11

Line	Length (m)	WC Bearing	Reduced Bearing	Latitude		Departure	
				Northing	Southing	Easting	Westing
PQ	189.50	30°20'	?	169.64		92.1	
QR	175.25	104°00'	?		90.71	149.31	
RS	197.20	165°30'	?		185.3	50.61	
ST	142.40	230°00'	?		84.82		106.34
TP	234.60	305°40'	?	191.33			118.8

5. Compute Bowley's Coefficient of Skewness based on the given data and interpret the result. 8+2=10

Class Interval	0-10	10-20	20-30	30-40	40-50
Frequency	2	3	6	5	4

0.7112

6. Calculate Spearman's Rank Correlation from the following data and also test its significance. 12

District	% of Agricultural Land having Irrigation Facility	% of Agricultural Land with HYV Seeds
A	78	65
B	52	36
C	36	28
D	47	32
E	47	37
G	92	71
G	87	74
H	80	68
I	68	52
J	62	48

0.672

Tabulated Value of 't' For 8 Degree of Freedom

Level of Significance	Value
0.01	3.36
0.05	2.31

7. Laboratory Note Book & Viva Voce

4+5=9

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Answer all the questions

1. Apply 'VLOOKUP' function in the given MS Excel sheet to take the values of average paddy productivity under concerned soil types given in cells E1:F4 and insert the same in relevant cells of column C corresponding to soil types given in column B and write the steps you have followed to do the same. 16

2. Explain how you would construct a scatter plot in Microsoft Excel to examine the relationship between study hours and marks obtained by 50 students. What does the interquartile range (IQR) represent in a Box & Whisker Plot? 4+2=6

3. Draw neat graticules on Polar Zenithal Stereographic Projection by using the following data and derive formula for mathematical calculation of radius of any parallel, ϕ with suitable diagrams. 11

Extension: Northern Hemisphere

Interval: 15°

RF = 1: 160 M

4. The following reading were obtained during a Theodolite Closed Traverse survey ABCDEA. Prepare a Gale's Traverse Table and plot the Traverse with a suitable scale. All WCBs are to be considered as the F. B. of the respective line. 11

Line	Length (m)	WC Bearing	Reduced Bearing	Latitude		Departure	
				Northing	Southing	Easting	Westing
AB	130	$55^\circ 30'$	?				
BC	66	$114^\circ 00'$	?				
CD	85	$205^\circ 00'$	?				
DE	56	$257^\circ 00'$	?				
EA	88	$297^\circ 00'$	?				

5. Compute Karl Pearson's Coefficient of Skewness based on the given data and interpret the result. 8+2=10

Class Interval	0-5	5-10	10-15	15-20	20-25
Frequency	2	4	6	3	1

6. Calculate Spearman's Rank Correlation from the following data and also test its significance. 12

District	Per capita Income (Rs)	% of Households with four wheeler
1	42985	20
2	98325	49
3	74129	35
4	100379	52
5	68321	39
6	82993	46
7	120568	62
8	48985	28
9	51327	32
10	145321	65

Tabulated value of 't' for 8 degree of freedom

Level of Significance	Value
0.01	3.36
0.05	2.31

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4+5=9



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UNIVERSITY OF NORTH BENGAL

PG 1st Semester Examination, 2025

GEOGRAPHY AND APPLIED GEOGRAPHY

GEOMORPHOLOGY AND CLIMATOLOGY

CORE: GEOGCCT0101N

Time Allotted: 3 Hours

Full Marks: 75

The figures in the margin indicate full marks

SECTION-I

Answer all the questions

15×2 = 30

1. Discuss the concept and types of models commonly used in geomorphological studies.

OR

Describe floodplain morphology with suitable diagrams.

2. Examine the influence of jet stream on genesis of Indian monsoon.

OR

Explain Milankovitch cycles in the context of climate change.

SECTION-II

Answer all the questions

7½×2 = 15

3. What are the major conceptual differences between philosophical views of gradualism and catastrophism as used in geomorphology?

OR

Explain J. T. Hack's theory of dynamic equilibrium for landform development.

4. Explain how Madden-Julian Oscillation of Indian Ocean affects rainfall distribution in India.

OR

Give an account of the effectiveness of the Paris Agreement's objectives in addressing climate change challenges.

SECTION-III

Answer all the questions

5×4 = 20

5. What are the basic differences between historical geomorphology and evolutionary geomorphology?

OR

Describe in brief the rating curve.

6. Write a short note on Caldera

OR

Describe the geometry of meandering channel pattern with suitable diagrams.

7. Mention the criteria for declaring the onset of south west monsoon in India as set by IMD.

OR

Discuss the role of palynology as a biological indicator of past climate.

8. What are the major deduction made about the past climate from the ice core in Greenland Ice Sheet Project-2 (GISP-2)?

OR

Write a short note on cloud burst in the context of Indian Himalayan region.

SECTION-IV

Answer all the questions (Choose the correct answer)

1 × 10 = 10

9. Air mass theory to explain the origin of Indian monsoon was put forth by M. T. Yin / H. Flohn / Edmund Halley / P. Koteswaram.
10. Asiatic high is developed during northern summer / winter / spring / autumn.
11. Monadnock is found over peneplain / panplain / etchplain / pediplain.
12. Toposheet is the example of scale model / analogue model / conceptual model / deterministic model.
13. The term 'Endrumpf' was introduced by W. Penck / W. M. Davis / L. C. King / R. J. Chorley.
14. Sixth Power Law was first described by Thornbury / Butzer / King / Hopkins.
15. Reynold's Number is used to classify channel type / flow type / sediment type / soil colour type.
16. James Hutton / Louis Agassiz / Ignaz Venetz / Jens Esmark gave the Comprehensive Theory of Extensive Glaciation through his major findings.
17. Which one out of the given geological periods is youngest: Cambrian / Ordovician / Silurian / Devonian.
18. South Lhonak Lake is situated in Sikkim / Nepal / Bhutan / Himachal Pradesh.

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UNIVERSITY OF NORTH BENGAL

PG 1st Semester Examination, 2025

GEOGRAPHY AND APPLIED GEOGRAPHY

ECONOMIC AND SETTLEMENT GEOGRAPHY

CORE: GEOGCCT0102N

Time Allotted: 3 Hours

Full Marks: 75

The figures in the margin indicate full marks

SECTION-I

Answer all the questions

15×2 = 30

1. Discuss Haggerstand's mode of diffusion of innovation. Critically analyse the theory.

OR

Define crop combination. What are the various methods used to delineate crop combination regions? Describe any two methods used to delineate crop combination regions.

2. Discuss the theory of origin of towns given by Griffith Taylor. Critically analyse the theory.

OR

- Define Urban Morphology. Critically explain the Multiple Nuclei theory of Urban landuse.

SECTION-II

Answer all the questions

7½ × 2 = 15

3. Explain in detail the industrial location theory of E. W. Rawstron.

OR

Define the term accessibility in transport network. Discuss the various indices used to measure accessibility in transport network with suitable examples.

4. Make a comparative analysis on the process of urbanisation in developed and developing countries.

OR

Write a note on the characteristics, problems and strategies to mitigate the problem of slums in Urban areas.

SECTION-III

Answer all the questions

5×4 = 20

5. Discuss the differences between capitalist and socialist economic system.

OR

Explain the crop theory as proposed by Von Thunen in his agricultural location model.

6. Discuss the spatial interaction model as proposed by Vance.

OR

Spatial interaction model as proposed by Ullman.

7. Discuss the problem of land acquisition and transaction in rural areas of India.

OR

Critically examine Crime and Social inclusion as a problem in rural areas.

8. Discuss the salient features of Edge City.

OR

Explain peri-urban areas.

SECTION-IV

Answer all the questions (Fill in the blanks / Choose the correct answer)

1×10 = 10

9. When diffusion expands uniformly it is called as _____ diffusion.
10. In what zone of Von Thunen's model the farmer's practiced the seven years crop rotation?
(a) Zone 2 (b) Zone 3 (c) Zone 4 (d) Zone 5
11. Modified Minimum Deviation Method of crop combination analysis was advanced by
(a) J. C. Weaver (b) S. M. Rafiullah (c) K. Doi (d) Thomas
12. Ranking co-efficient method for measuring agricultural productivity was developed by
(a) A. M. Khusroo (b) M. G. Kendall (c) M. Shafi (d) S. S. Bhatia
13. Lines connecting equal aggregate transportation cost's in Weber's industrial location theory are called
(a) Isohaline (b) Isodapane (c) Isotion (d) Isohyet
14. Who wrote the book "Man Makes himself"?
(a) Lewis Mumford (b) Griffith Taylor (c) Henri Pirenne (d) Harold Carter
15. Large cities with specialized functions, complex society with significant economic cultural and political centre for a country is
(a) Megapolis (b) Metropolis (c) Tyrrannopolis (d) Necropolis
16. One of the assumption of concentric zone model was: expanding population / decreasing population / stagnant population / None of these
17. Which of the following is an example of satellite town: Samshabad / Lucknow / Ajmer / Chandigarh
18. Zurich / Tokyo / London / Atlanta is a not a global city.

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UNIVERSITY OF NORTH BENGAL

PG 1st Semester Examination, 2025

GEOGRAPHY AND APPLIED GEOGRAPHY

SOIL AND BIOGEOGRAPHY

DSE: GEOGDET0101A

Time Allotted: 2 Hours

Full Marks: 42

The figures in the margin indicate full marks.

SECTION-I

Answer all the questions

10×2 = 20

1. Explain techniques for controlling soil temperature.
OR
Explain with illustration the environmental impact of soil erosion.
2. Discuss marine ecosystem and its salient features.
OR
Explain the concept of Deep and Shallow Ecology.

SECTION-II

Answer all the questions

7×2 = 14

3. Describe various kinds of soil water with suitable diagrams.
OR
Discuss the major anthropogenic causes of induced soil erosion.
4. State the law of minimums in plant growth.
OR
✓State the major causes of Biodiversity depletion.

SECTION-III

Answer all the questions (Choose correct answer / Fill in the blank)

1×8 = 8

5. The 'feel method' is applied for the determination of soil temperature / colour / texture / structure.
6. Purity of the colour is said to be hue / value / chrome.
7. Process of eluviation is the dominant characteristics of O / A / E / B horizon.
8. Surface horizon of the soil profile is called pedon / epipedon / permafrost / sial
9. One unit change in pH scale indicates 0.1 / 10 / 100 / 1000 times change in absolute concentration of hydrogen ions in the soil.
10. India is rich in 501 / 512 / 516 / 523 wildlife sanctuaries.
11. In 1911 / 1921 / 1931 / 1941 Shelford postulated the concept of law of tolerance.
12. UNESCO's Man and Biosphere programme was launched in 1970 / 1971 / 1973 / 1974.

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