'समानो मन्त्रः समितिः समानी'

UNIVERSITY OF NORTH BENGAL

PG 1st Semester Examination, 2024

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 $15 \times 2 = 30$

1. Explain with illustrations the concept and classification of geomorphic system.

OR

Explain the channel network development processes with suitable sketches.

2. Explain the origin of Indian monsoon in the light of Jet Stream theory.

OR

Define the term climate change. Explain the role of biological indicators used to study the past climate with relevant diagrams and examples.

SECTION-II

Answer *all* the questions $7\frac{1}{2} \times 2 = 15$

3. Mention the salient features of Morisawa's theory of landform development.

OR

Write in brief the nature of enquiry and nature of interpretation in the context of geomorphological studies.

4. Write in brief the causes of acid rain.

OR

What are the major impacts of climate change in India? Give specific examples.

SECTION-III

Answer *all* the questions $5 \times 4 = 20$

5. Outline the main characteristics of turbulent flow.

OR

What are the favourable conditions required for development of straight channel pattern?

6. Compare and contrast the philosophical views of 'Steadystatism' and 'directionalism' in geomorphology.

OR

Write a note on doline.

7. Give the major findings of IPCC Sixth Assessment Report.

OR

Write in brief the mechanism of occurrence of glacial lake outburst flood.

8. Write the impacts of Madden-Julian Oscillation on rainfall distribution in India.

OR

Explain how records from Mayan Civilisation indicates that increasing aridity led to the downfall of the thriving civilisation.

SECTION-IV

Answer *all* the questions (Fill in the blanks / Choose the correct answer) $1 \times 10 = 10$

9. ENSO stands for _____.
10. The classical theory for origin of monsoon in Asia was put forth by M. T. Yien / H. Flohn / E. Halley / P. Koteswaram.
11. Metamorphism of granitic rock is called pneumatolysis. True/False
12. Rating curve is used to estimate Channel Velocity / discharge / wetted perimeter / hydraulic radius.
13. 'Anastomosing' and 'anabranching' are geomorphic indication of high degree of braiding / meandering / Channel Shift / avulsion formation.
14. _____ propounded dynamic equilibrium theory for explanation of landscape evolution.
15. Massive joint rocks acting upon acidulated water give birth to 'grotesque': True/False.
16. Ordovician tillites are found in Atacama desert / Sahara desert / Kalahari desert / Thar desert.
17. Historical evidence of Frost Fair has been recorded on the Nile river / Thames river / Mississippi river / Danube river.
18. The condition when the earth was largely covered by ice is referred to as Ice ball earth / Snowball earth / Frostly earth / Sheetball earth.

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PG 1st Semester Examination, 2024

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 $15\times2 = 30$

1. Define crop diversification. Discuss in detail the various methods of delineating crop diversification regions. 3+12

OR

Define the term connectivity in transport network. Discuss the various indices used to measure connectivity in transport network with suitable examples. 3+12

2. Define urban landuse. Give a critical account of concentric zone theory of urban landuse. 3+12

OR

Explain the Rank-Size Rule. Discuss how the forces of diversification and unification govern the size and number of settlements with the help of diagrams. 5+10

SECTION-II

Answer *all* the questions $7\frac{1}{2}\times2 = 15$

3. Explain in detail the types of economic systems. $7\frac{1}{2}$

OR

Elaborate the factors affecting spatial organisation of economic activities. $7\frac{1}{2}$

4. Discuss the various factors which control rural to urban migration. $7\frac{1}{2}$

OR

Write short note on theories of origin of towns given by Childe and Mumford. $7\frac{1}{2}$

SECTION-III

Answer *all* the questions 5×4 = 20

5. Types of diffusion. 5

OR

Industrial location theory proposed by Tord Palander. 5

6. Difference between retail and wholesale market. 5

OR

Concept of locational rent as conceived in Von- Thunen's agricultural landuse theory. 5

7. Major components taken to study urban social area analysis. 5

OR

Major environmental and socio-economic problems faced by slum inhabitants in India. 5

8. Causes of landuse change in rural areas. 5

OR

Salient features of satellite town. 5

SECTION-IV

Answer *all* the questions (Fill in the blanks / Choose the correct answer) 1×10 = 10

9. Collective ownership is a feature of capitalism / socialism / naturalism / mixed economy.

10. _____ developed the formula $\sqrt{\frac{\sum d^2}{n}}$ for calculating the crop combination.

11. Berry's Entropy Index is used to calculate the crop rotation / diversification / combination / efficiency.

12. Taaffe identified 4 / 5 / 6 / 7 stages in the sequence of transportation development.

13. The points which form the basic elements of a graph are commonly known as _____.

14. Friedmann gave his 'World City Hierarchy' in the year 1983 / 1984 / 1985 / 1986.

15. The 'Law of Primate City' was given by Burgess / Jefferson / Zipf / Harvey.

16. Income distribution / housing pattern / educational attainment / national security policy is not studied in Social Area Analysis.

17. Garreau identified 3 / 4 / 5 / 6 varieties of edge city.

18. G. Taylor classified cities into 6 / 7 / 8 / 9 types based on their developmental stages.

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PG FIRST SEMESTER EXAMINATION, 2024
DEPARTMENT OF GEOGRAPHY & APPLIED GEOGRAPHY
UNIVERSITY OF NORTH BENGAL
GENERAL PRACTICAL
CODE: GEOGCCP0103N
DATE: 05.02.2025

Time: 4Hrs. **Full marks: 75**

Answer all the questions

1. The given input data file contains data on paddy productivity (Quintal per hectare) for three different soil types namely soil type 1, 2 and 3. Apply 'AVERAGEIF' function on MS Excel to calculate average paddy productivity only for soil type 2. 22

2. Derive formula and draw a neat graticule on Mercator's Projection with the following information. 11
Extension: Whole World.
Interval: 15 °.
R.F = 1: 150,000,000.

3. A theodolite was set up at stations A and B, and the angles of elevation to the top of an electric poll M were recorded as 12°45' and 17°30' respectively. The distance between A and B is 20 m. The instrument height at both stations is 1.50 m. The RL (Reduced Level) of the tower's base is 40 m. It is noted that the telescope was set up in the same vertical plane. 4+4+3
Calculate:
i) The height of the tower from Mean Sea Level (MSL).
ii) The horizontal distance from station A to the electric poll's base (P).
iii) Plot the data with a suitable scale.

4. Calculate Bowley's Coefficient of Skewness and interpret the result. 8+2

Class Interval	Frequency
0-10	12
10-20	16
20-30	26
30-40	38
40-50	22
50-60	15
60-70	7
70-80	4

5. Calculate Pearson's Correlation from the following data and test its significance. 12

Student	Avg. hrs. spent studying per day	% of marks in annual examination
1	6.5	78
2	8.9	80
3	12.7	91
4	14.8	93
5	4.7	56
6	5.1	51
7	9.3	86
8	10.5	84
9	7.4	78
10	3.8	43
11	7.9	67
12	7.0	62

6. Laboratory notebook and viva-voce. 4+5

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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 $10\times2 = 20$

1. Describe various types of soil structure with suitable diagram.

OR

Explain with illustrations the environmental impacts of soil erosion.

2. Write a note on concept and types of biodiversity.

OR

Attempt Raunkiaer's classification of plants.

SECTION-II

Answer *all* the questions $7\times2 = 14$

3. Explain the process of Laterisation.

OR

Make a distinction between soil erosivity and soil erodibility.

4. What are the differences between in-situ and ex-situ conservation in biodiversity?

OR

Write a short note on the concept of law of limiting factors.

SECTION-III

Answer *all* the questions (Choose correct answer / Fill in the blank) $1\times8 = 8$

5. Calcite / Phosphorous / Potassium / Sodium is the primary minerals in Limestone and Chalk.
6. N / P / K / B is a soil micronutrient.
7. Clay particles have an effective diameter less than 0.002 / 0.004 / 0.006 / 0.008 mm.

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8. A soil horizon as cold as 5 / 7 / 9 / 11 °C acts as a deterrent to the elongation of plants root.

9. Full form of USLE is _____.

10. Gibson is a subtropical desert located in Australia / Argentina / Arabian Peninsula / Africa.

11. Actinomycetes are the example of soil microflora: True/False.

12. Reduction of biodiversity from equator to pole is known as latitudinal gradient / latitudinal compensation / latitudinal loss / latitudinal extinction.

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