= 5.5 = (4)

5.5 / 14 — 2024

GEOPCOR10P: MAP INTERPRETATION AND MAPPING TECHNIQUES

Full Marks: 28 Time: 2 Hours

Unit 1: Map Projections and Analysis of Geological Maps

1. Draw the graticules of Polyconic projection at 15° intervals on scale, 1:105,000,000 for the extension 25° N to 85° N and 55° W to 145° W. 3+5=8
2. Calculate the length of the equator and central meridian for Mollweide's projection on scale 1:275,000,000. 1+1=2
3. Find the UTM co-ordinate with UTM grid of Place A (106°51'E, 6°12'S) when it lies 204207 m East from Central meridian and 686638 m South of the equator. =2
4. Coordinates of two points A and B in the same zone of UTM projection are as follows: A = Easting 421761, Northing 5449675; and B = Easting 421717, Northing 5449435. Find the distance between AB. =2
5. Draw geological section along the given line and interpret the map. (4+6)+4=14

5-5-1 10.5 : 16/8

GEOPCOR010P: MAP INTERPRETATION AND MAPPING TECHNIQUES

FULL MARKS: 14 TIME: 45 MINUTES

Unit 2: Interpretation of Topographical Maps

1. Draw an Absolute Hypsometric Curve and a Clinographic Curve from the given area-altitude data of a drainage basin. Calculate the Hypsometric Integral and interpret it. 5+5+1+3

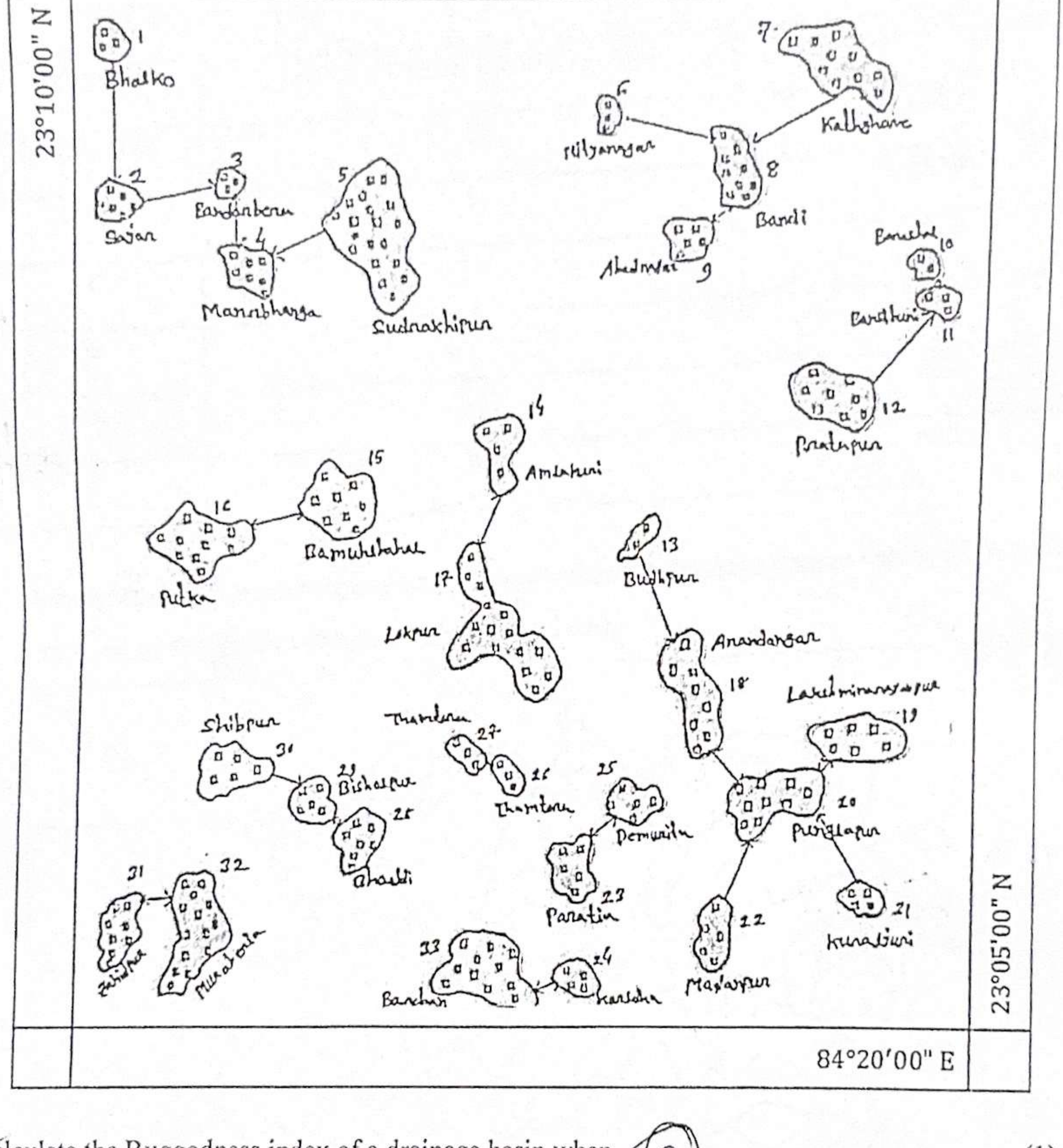
Elevation Zones (Contour Interval in m)	Area (Sq. Km.)
100 – 150	400.25
150 – 200	60.44
200 – 250	32.65
250 – 300	4.50
300 – 350	2.75

GEOPCOR010P: MAP INTERPRETATION AND MAPPING TECHNIQUES

FULL MARKS: 14 TIME: 45 MINUTES

Unit 2: Interpretation of Topographical Maps

1. Calculate the Nearest Neighbour Analysis from the below map and interpret it. (4+1=5)



2. Calculate the Ruggedness index of a drainage basin when, (1)

   Maximum relief- 1200

   Minimum relief -250

   Total drainage length- 100 km

   Basin area- 50 km^2

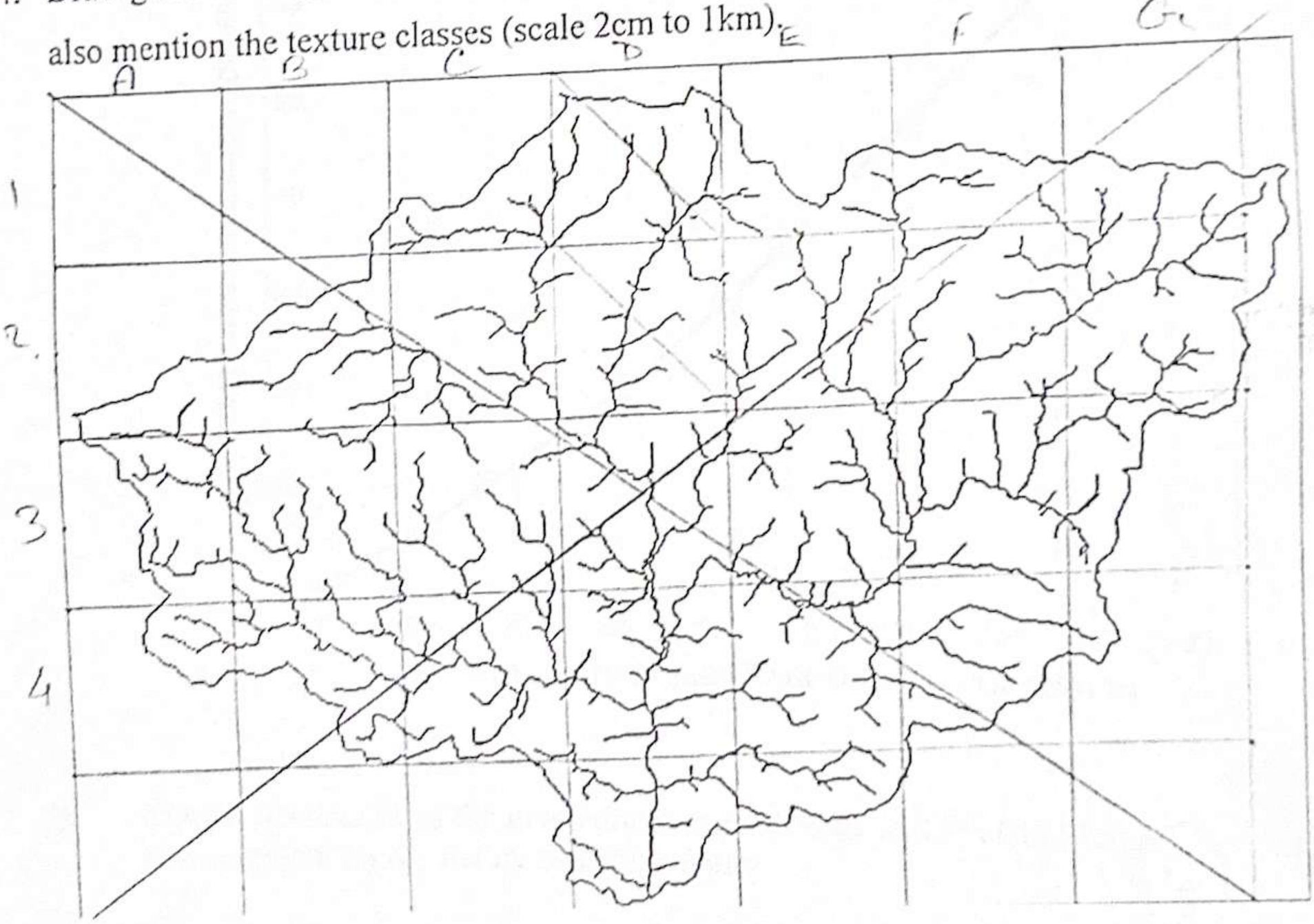
3. Draw a longitudinal profile of the river using the provided data and indicate the point where th
(4)

slope changes.

POINT	DISTANCE FROM SOURCE (IN CM)	ELEVATION (IN METER)
A(SOURCE)	5	1200
B	8	1150
C	15	1100
D	20	800
E	25	700
F	30	600

4. Draw grids on the given drainage basin and calculate the drainage texture values of D1 to D4 grids (4)

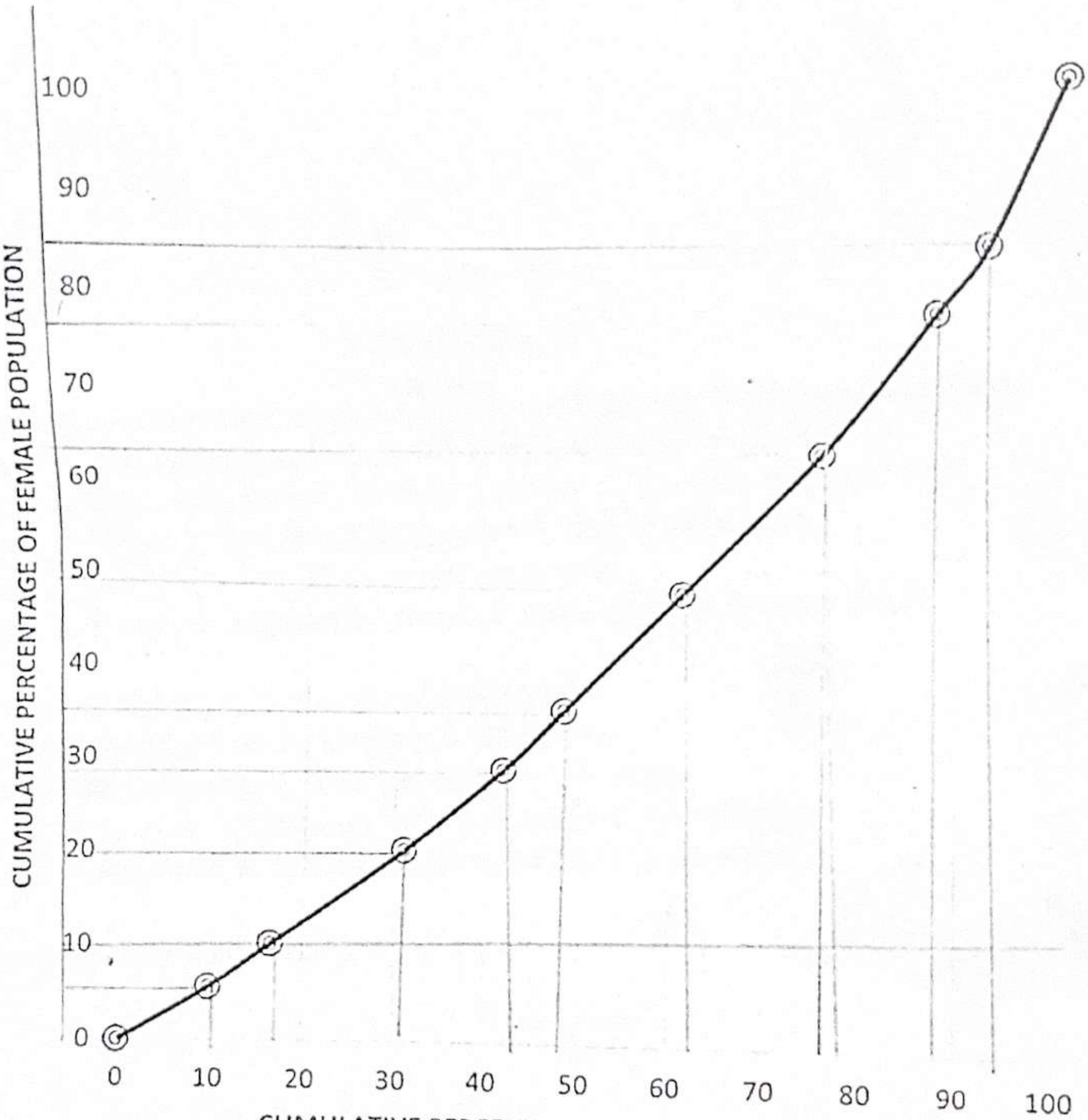
also mention the texture classes (scale 2cm to 1km).



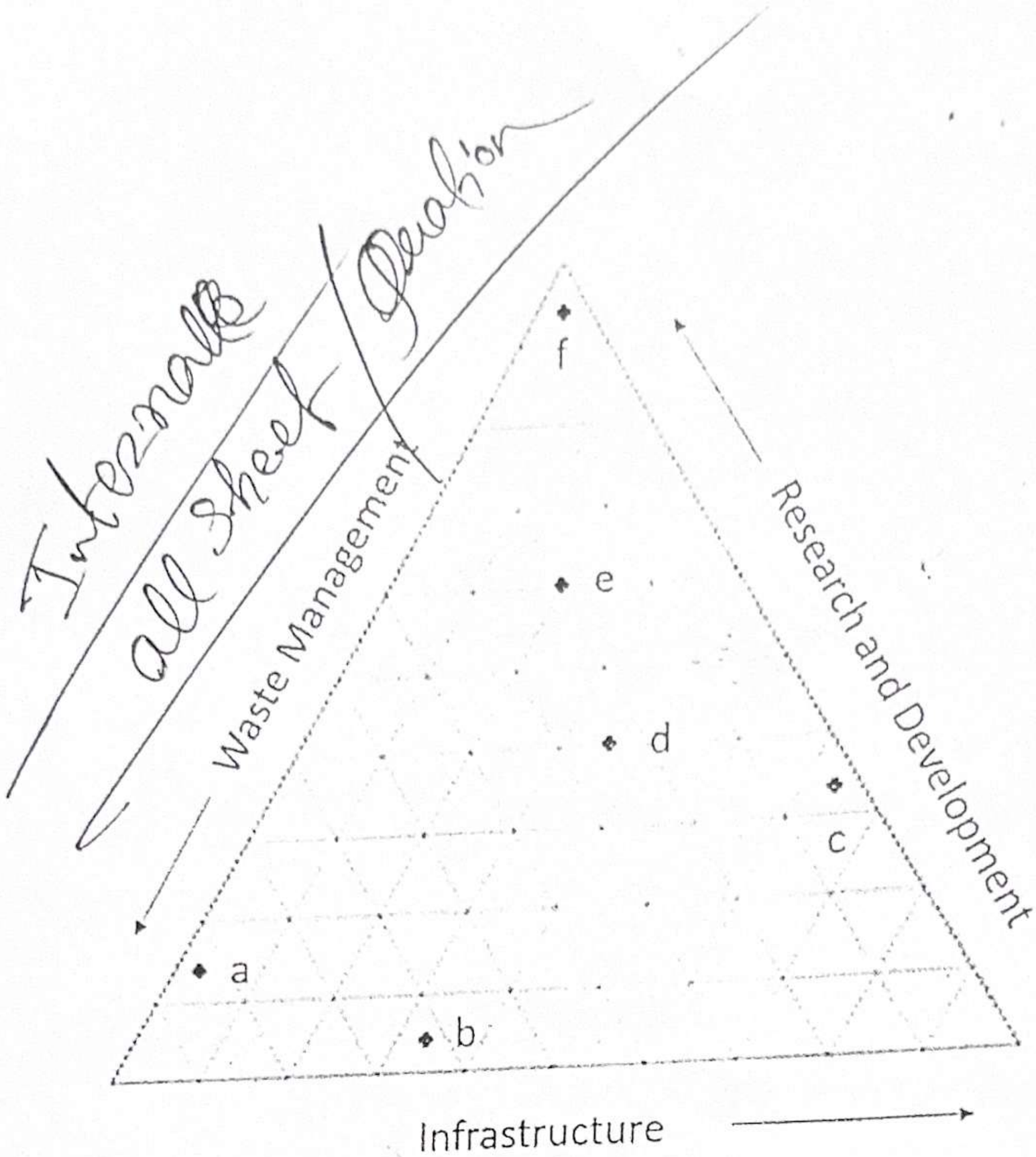
Total Marks: 12 10P – Unit 3 Set A Time: 45 mins.

Q1. The first census of independent India was conducted in 1951; during which the country's population was counted as 361.08 million. Do you think the population of 1951 exceeds its exponential projected value, given that the population of 1931 and 1941 were 278.97 and 318.66 respectively? (3)

Q2. The Handloom Census of India (2019-2020), counted the total number of households involved in the handloom sector of West Bengal as 5,42,557, out of which 74,829 were urban households. Assam, on the other hand, has 17,318 urban households in the handloom sector against a total of 12,69,506 households. Consider using a suitable statistical technique to emphasise the degree of specialisation of urban handloom sectors between these two states. (3)



Q3. Extract the data from the given graph and calculate its Gini Coefficient and comment on the nature of its inequality. (3)



With reference to the diagram given above, consider the following statements:
Statement 1: Town 'f' specialises in R&D and waste management.
Statement 2: One of the minor activities in town 'e' is waste management.
Statement 3: Town 'a' and 'b', both specialises in infrastructure.
Statement 4: Town 'c' specialises in infrastructure.
Statement 5: Town 'd' emphasises more on infrastructure than on R&D.

Q4. Write 'true' or 'false', w.r.t the above statements: (2)
(a) Statement 1 and Statement 4 are correct.
(b) Both Statement 2 and Statement 5 is correct.
(c) Statement 3 is incorrect while Statement 4 is correct.
(d) Statement 5 is correct while statement 1 is incorrect.

Q5. State the major and minor activities of Town 'c'. (1)