EXAM YEAR- 2019

SEMESTER-I, II, III

PART- II, III

.

U.G. 2nd Semester Examination - 2019

GEOGRAPHY

[HONOURS]

Course Code : GEOH/CC-T-03

Course Title : Human Geography

Full Marks : 60 Time : $2\frac{1}{2}$ Hours

The figures in the right-hand margin indicate marks.

Candidates are required to give their answers in their own words as far as practicable.

UNIT–I

(Nature and Principles)

[Marks : 20]

1. Answer any **three** from the followings: $2\times3=6$

a) Define *social space*.

b) Differentiate *race* from *ethnicity*.

c) What do you mean by cultural hearth?

d) Who are *homohabilis*?

e) Differentiate *acculturation* from *assimilation* of culture.

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2. Answer any **one** from the followings: 4×1=

a) Highlight the major characteristics mongoloid racial group.

b) What are the major differences betwe *oriental* and *occidental* cultural realms?

3. Answer any **one** from the followings: 10×1=1

a) Evaluate the major themes of human geograph with their relevance in present time.

b) Explain the major processes, causes an consequences of cultural diffusion.

5.

UNIT–II

(Society, Demography and Ekistics)

[Marks : 40]

4. Answer any **seven** from the followings: 2×7=14

a) What is meant by *demographic divide* in India?

b) Define optimum population.

c) What do you understand by pastoral nomadism?

d) What do you mean by social morphology?

e) Differentiate hunting from gathering.

6

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f) Give one example of mining town and one of port town in India.

g) Mention any two characteristics of subsistence farming.

h) Distinguish between *nucleated* and *dispersed* settlement.

i) Cite four examples of environmental degradation caused by population growth.

j) What is meant by 'population-resource region'?

k) Define 'urban society'.

5. Answer any **four** from the followings: 4×4=16

a) Highlight the global trend of urbanization.

b) Establish the relationship between climatic condition and rural house type in India with suitable example.

c) Highlight the major causes of disparity in population distribution of India.

d) Bring out the major prospects and problems of urban society in the developing world.

e) Narrate the critical issues of Environment-Development conflict.

f) Outline in brief the bases of functional classification of cities.

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6. Answer any **one** from the followings: $10 \times 1 = 1$

a) Critically evaluate the demographic transitio model with its application in Indian perspectiv of population growth.

b) Account for the types and patterns of rur settlement in India with necessary example.

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U.G. 2nd Semester Examination - 2019

GEOGRAPHY

[HONOURS]

Course Code : GEOH/CC-T-04

Course Title : Cartograms, Survey and Thematic Mapping

Full Marks : 40 Time : $2\frac{1}{2}$ Hours

The figures in the right-hand margin indicate marks.

Candidates are required to give their answers in their own words as far as practicable.

1. Answer any **five** questions: $2\times5=10$

i) What do you mean by *Thematic map*?

ii) Define *Cartogram*.

iii) Write any two advantages of Ergograph.

iv) What is meant by *Reduced Bearing*?

v) What is *Change Point*?

vi) What do you understand by *Surveying* and *Levelling*?

vii) What is meant by *Line of Collimation*?

viii) Distinguish between *Bench Mark* and *Datum Line*.

360°-

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Answer any **two** questions: $5\times2=10$

i) Bring out the utilities of Isopleth and Chropleth maps.

ii) Enumerate the relationship between *Whole-circle Bearing* and *Reduced Bearing*.

iii) Illustrate with a suitable diagram the relationship between *Fore Bearing* and *Back Bearing*.

iv) Highlight the procedure and significance of *one degree method* in Theodolite survey.

Answer any **two** questions: $10\times2=20$

i) Explain different types of 'Surveying' mentioning the basis of classification. 10

ii) Analyse the salient features of Climograph after Taylor. How is it interpreted? $7+3=10$

iii) Discuss the process of traversing by Prismatic Compass. Highlight different methods of plotting and adjustment of closing error. $6+4=10$

iv) Write a short note on Landuse / Landcover map highlighting its merits and demerits. 10

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U.G. 2nd Semester Examination - 2019

GEOGRAPHY

[HONOURS]

Course Code : GEOH/CC-04/PR

Course Title : Cartograms, Survey and Thematic Mapping

(PRACTICAL)

SET-I

Marks : 20 Time : 4 Hours

figures in the right-hand margin indicate marks.

Candidates are required to give their answers in their own words as far as practicable.

Answer all the questions.

i) **Prepare a closed traverse survey for a given** triangular area by a prismatic compass and enter the observed readings in a neatly drawn field-book.

ii) Find out the corrected bearings.

iii) Plot the traverse on a suitable scale.

iv) Adjust the closing error as per Bowditch's rule.

4+2+2+2=10

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OR

(Question for inclement weather)

The following readings (in metre) at different stations were collected during a field survey with a Dumpy Level along a line MN (Length-60 metres) at 5 metres interval:

1.620(M), 1.505, 2.050, 3.005, 3.320, 3.335, 2.750, 1.150, 1.110, 0.995, 1.575, 2.825, 3.005(N)

The instrument was shifted at 7th station. B.M. of the change point is 30 metres. Enter the readings in a neatly drawn field-book. Find out the R.L. of all the stations. Draw the profile with a suitable scale. Comment on the nature of the ground. 3+3+3+1=10

2. Laboratory Note Book and Viva voce. 5+5=10

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U.G. 1st Semester Examination - 2019

GEOGRAPHY

[HONOURS]

Course Code : GEO(H)CC-01-T

Geotectonics and Geomorphology

Full Marks : 60 Time : $2\frac{1}{2}$ Hours

The figures in the right-hand margin indicate marks.

Candidates are required to give their answers in their own words as far as practicable.

UNIT-I

(Geotectonics)

[Marks : 20]

1. Answer any **three** from the followings: $2\times3=6$

   a) Define thrust plane.

   b) What is plutonic earthquake?

   c) What is *synclinorium*?

   d) Define normal fault.

   e) What is lithosphere?

2. Answer any **one** from the followings: $4\times1=4$

   a) Mention the major characteristics of Mesozoic Era.

[Turn Over]

b) Differentiate *P waves* from *S waves*.

3. Answer any **one** from the followings: 10×1=10

a) Distinguish between the Airy's and Pratt's models on Isostasy.

b) Describe the major extrusive volcanic landforms with suitable diagrams.

UNIT-II

(Geomorphology)

[Marks : 40]

4. Answer any **seven** from the followings: 2×7=14

a) What is *rock creep*?

b) What is *peneplain*?

c) What is landslide?

d) What do you mean by *polycyclic* landforms?

e) What is *endrumpf*?

f) What is *carbonation*?

g) What is *fault line scarp*?

h) What is *nick point*?

i) What do you mean by *blind valley*?

j) What is *longshore* bar?

k) What is *playa*?

5. Answer any **four** from the followings: 4×4=16

a) Differentiate *eustatic* rejuvenation from *static* rejuvenation.

b) State the salient features of *barchan* with a suitable diagram.

c) Mention the different types of *sea cliff*.

d) Distinguish between the process of *block disintegration* and *granular disintegration*.

e) Specify the characteristics of *eskar* and *kame*.

f) Differentiate *zeugen* from *yardang*.

6. Answer any **one** from the followings: 10×1=10

a) Give an account on the development of landforms and river network on folded structure.

b) Describe the major landforms produced by glacial erosion with suitable diagrams.

U.G. 1st Semester Examination - 2019

GEOGRAPHY

[HONOURS]

Course Code : GEO(H)CC-02-T

Full Marks : 40 Time : $2\frac{1}{2}$ Hours

The figures in the right-hand margin indicate marks.

Candidates are required to give their answers in their own words as far as practicable.

1. Answer any **five** questions from the followings: $2\times5=10$

a) What is *vernier constant*?

b) Write two characteristics of Granite.

c) What do you mean by *isoline map*?

d) Differentiate *hade* from *heave*.

e) What do you understand by *line of unconformity*?

f) Differentiate polar from rectangular coordinate.

g) Mention two utilities of R.F.

h) What is Galena?

[Turn Over]

2. Answer any **two** questions from the followings: 5×2=10

a) Mention the major characteristics of gnomonic projection.

b) State the influence of modern technology on the development of cartography.

c) How would you determine the thickness of bed from a geological map?

d) Identity two merits and two demerits of UTM projection.

3. Answer any **two** questions from the followings: 10×2=20

a) Elucidate the reference scheme of old and open series topographical sheets of SOI.

b) Compare the construction and use of linear, comparative and diagonal scales.

c) Describe the components of a thematic map with suitable examples highlighting there significances.

d) Bring out the concept of Geoid and Spheroid with their applications in modern Cartography.

U.G. 1st Semester Examination - 2019

GEOGRAPHY

[HONOURS]

Course Code : GEO(H)CC-02/PR

[PRACTICAL]

SET-I

Full Marks : 20 Time : 4 Hours

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 all the questions.

1. a) Construct a comparative scale to read 2 miles/ 2km in primary division and 440 yards/250 metres in secondary division when the scale of the map is 1:60,000.

   b) Prepare a relative relief map of an area (16cm×16cm) from the given toposheet. 5+5=10

2. Laboratory Note Book and Viva Voce. 5+5=10

U.G. 3rd Semester Examination - 2019

GEOGRAPHY

[HONOURS]

Course Code : GEO(H)CC-05-T

Climatology

Full Marks : 60 Time : $2\frac{1}{2}$ Hours

The figures in the right-hand margin indicate marks.

Candidates are required to give their answers in their own words as far as practicable.

Unit-I

(Elements of the Atmosphere)

(Marks : 20)

1. Answer any **three** of the following questions : $2\times3=6$

a) What is normal *lapse rate*?

b) Specify two salient characteristics of Ionosphere.

c) Define *solar constant*.

d) What is meant by ozone hole?

e) What is *aurora australis*?

2. Answer any **one** of the following questions : $4 \times 1 = 4$

a) Highlight the major characteristics of atmospheric layering based on composition.

b) How is the insolation influenced by latitutes?

3. Answer any **one** of the following questions : $10 \times 1 = 10$

a) Explain the different types of inversion of temperature.

b) Bring out the concept of heat budget of the atmosphere.

Unit-II

(Atmospheric Phenomena, Climate Change and Climatic Classification)

(Marks : 40)

4. Answer any **seven** of the following questions : $2 \times 7 = 14$

a) What is meant by *occlusion*?

b) How does doldrum form?

c) What do you understand by *jet maxima*?

d) What do you mean by latent heat of condensation?

e) Differentiate *frontogenesis* from *frontolysis*.

f) Define wet *adiabatic lapse rate*.

g) State the characteristics of BSh climate.

h) Distinguish between *barotropic* and *baroclinic* condition.

i) How does *stability* differ from *instability* of the atmosphere?

j) What is supercooled droplet?

k) Define dew point.

5. Answer any **four** of the following questions : 4×4=16

a) How does jet stream influence the Indian monsoon?

b) Bring out the bases of climatic classification of Köppen.

c) Highlight the major determinants of the air mass modification.

d) Distinguish between *warm* and *cold* fronts.

e) Enunciate the circulation of planetary wind with illustration.

f) State the major forms of condensation.

6. Answer any **one** of the following questions : $10 \times 1 = 10$

a) Critically discuss the 'Ice Crystal theory of precipitation.

b) Explain the mechanism of formation of mid latitude cyclones.

U.G. 3rd Semester Examination - 2019

GEOGRAPHY

[HONOURS]

Course Code : GEO(H)CC-06-T

Statistical Methods in Geography

Full Marks : 40 Time : $2\frac{1}{2}$ Hours

The figures in the right-hand margin indicate marks.

Candidates are required to give their answers in their own words as far as practicable.

1. Answer any **five** from the followings : $2\times5=10$

a) What is meant by frequency density?

b) What is class width?

c) What are discrete data?

d) What is ratio?

e) What is central tendency?

f) What is sample?

g) Give an example of nominal scale of measurement.

h) What is class frequency?

[Turn over]

2. Answer any **two** from the following : $5 \times 2 = 10$

a) Distinguish between primary and secondary sources of data.

b) Specify purposive sampling with suitable example.

c) Differentiate correlation from regression.

d) Mention the uses of median and mode.

3. Answer any **two** from the followings : $10 \times 2 = 20$

a) Elaborate the significance of statistics in Geography with specific examples.

b) Explain the properties of a normal distribution.

c) Discuss any three types of measures for dispersion with examples.

d) State the major advantages and disadvantages of random sampling.

U.G. 3rd Semester Examination - 2019

GEOGRAPHY

[HONOURS]

Course Code : GEO(H)CC-07-T

Geography of India & West Bengal

Full Marks : 60 Time : $2\frac{1}{2}$ Hours

The figures in the right-hand margin indicate marks.

Candidates are required to give their answers in their own words as far as practicable.

Unit-1

Geography of India

(Marks : 40)

1. Answer any **seven** of the following questions : $2\times7=14$

   i) Identify different ranges of the Himalayas on the basis of altitude.

   ii) Differentiate *bhabar* region from *tarai* region.

   iii) What is meant by the term 'Regionalisation'?

   iv) Define *race*.

   v) What do you understand by 'Agricultural Regions'?

vi) What is *ethnicity*?

vii) What is meant by 'Neonatal Mortality Rate'?

viii) What do you understand by tribes?

ix) Why is 'Bombay High' significant in India?

x) Highlight the economic importance of 'Chota Nagpur Plateau' in India.

xi) What is 'Information Technology'?

2. Answer any **four** of the following questions : 4×4=16

i) Describe the physiography of Indian Thar Desert in brief.

ii) Specify the drainage characteristics of the Great Plains of Northern India.

iii) Mention names of the major tribes in India highlighting their state-wise distribution.

iv) How far Green Revolution was responsible for bumper crop in India?

v) Why hydropower plants are more environment-friendly than thermal power plants?

vi) Enumerate the conditions favourable for the growth of automobile industries in India.

3. Answer any **one** of the following questions :

$10 \times 1 = 10$

i) Discuss the physiographic divisions of India after R.L.Singh.

ii) Divide India into linguistic regions and bring out the salient features of any two of them.

Unit-2

Geography of West Bengal

(Marks : 20)

4. Answer any **three** of the following questions : $2 \times 3 = 6$

i) What is meant by '*doab*'?

ii) Identify the districts in West Bengal where *sal* forests are observed.

iii) Why do rivers flow eastward over *Rarh* region in West Bengal?

iv) Name two cash crops cultivated in West Bengal.

v) Mention the importance of Haldia industrial complex in the economy of West Bengal.

5. Answer any **one** of the following questions : $4 \times 1 = 4$

i) Bring out the characteristics of drainage system in West Bengal.

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ii) Specify the conditions favourable for the growth of agro-based industries in West Bengal.

6. Answer any **one** of the following : $10 \times 1 = 10$

i) Give an account of the physiographic divisions of West Bengal with a suitable map.

ii) Enumerate and discuss the favourable conditions and problems of regional development of Darjeeling Hills in West Bengal.

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U.G. 3rd Semester Examination - 2019

GEOGRAPHY

[HONOURS]

175

Skill Enhancement Course (SEC)

Course Code : GEO(H)SEC/P/01/A

[PRACTICAL]

[New Syllabus under CBCS]

SET-II

Full Marks : 40 Time : 4 Hours

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 all the questions.

1. a) State the relationship of mean, median and mode in a distribution.

   b) What is scatter diagram? 3+3=6

2. Calculate the followings using MS Excel from given data (Table-1):

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Table-1

Altitude (m)	No. of Person
200-250	560
250-300	715
300-350	509
350-400	489
400-450	170
450-500	351
500-550	243
550-600	104
600-650	76
650-700	62

a) Mean

b) Standard deivation

c) Coefficient of variation of the distribution.

8+10+6=24

3. Laboratory Note Book and Viva Voce. 5+5=10

U.G. 3rd Semester Examination - 2019

GEOGRAPHY

[HONOURS]

Course Code : GEO(H)CC-06/PR

(Statistical Methods in Geography)

[PRACTICAL]

SET-I

Full Marks : 20 Time : 4 Hours

The figures in the right-hand margin indicate marks.

Answer all the questions.

1. From the given set of data (Table No.1):

   a) Calculate Mean.

   b) Calculate Median.

   c) Calculate Mode.

   d) Draw a Histogram and locate the Mode on it.

2+2+2+(3+1)=10

Table No.1: No. of Mouzas with percentage of households having electricity (2011):

Percentage of households having electricity	No. of Mouzas
35-39	221
40-44	187
45-49	289
50-54	313
55-59	368
60-64	386
65-69	402
70-74	569
75-79	385
80-84	220
85-89	177
90-94	183

Laboratory Note Book and Viva Voce. 5+5=10

2019

GEOGRAPHY

[HONOURS]

Paper : IV

[NEW SYLLABUS]

Full Marks : 75 Time : 4 Hours

The figures in the right-hand margin indicate marks.

Candidates are required to give their answers in their own words as far as practicable.

GROUP–A

(Climatology)

[Marks : 35]

1. Answer any **three** of the following questions: $1\times3=3$

a) What is *eye of cyclone*?

b) Define *solar constant*.

c) What is *geostrophic* wind?

d) What do you mean by *advection*?

e) What is *isohyet*?

2. Answer any **five** of the following questions: $2\times5=10$

a) Differentiate *baroclinic* from *barotropic*.

b) What do you understand by *latent heat*?

c) What do you mean by *rainshadow* zone?

d) Define *dew point*.

e) Mention two characteristics of tropical maritime air mass.

f) What is 'BSh'?

g) What do you mean by *doldrum*?

h) Define *albedo*.

3. Answer any **two** of the following questions: $6\times2=12$

a) Highlight the salient characteristics of tropical cyclone.

b) **Give an account of the different types of** *inversion* of temperature.

c) Evaluate the *collision coalescence* theory for explaining precipitation mechanism.

4. Answer any **one** from the following: $10\times1=10$

a) Critically evaluate the climatic classification after Thornthwaite.

b) Explain the mechanism of temperate cyclone with suitable illustrations.

GROUP–B

(Hydrology)

[Marks : 20]

5. Answer any **two** of the following: 1×2=2

a) Define *porosity*.

b) What is *storm hydrograph*?

c) What is meant by infiltration?

d) What do you understand by *baseflow*?

6. Answer any **one** question of the following: 2×1=2

a) Distinguish between aquifer and aquitard.

b) What is *interception?*

c) What do you mean by *transpiration*?

7. Answer any **one** of the following: **6×1=6**

a) Explain the scope of hydrology.

b) Describe the determinants of run off cycle.

8. Answer any **one** of the following: 10×1=10

a) Account for the recharge and discharge of ground water.

b) Briefly explain the global hydrological cycle with of special reference to the impact of global warming.

GROUP–C

(Oceanography)

[Marks : 20]

9. Answer any **two** of the following: 1×2=2

a) What is *gyre*?

b) What is *Pacific ring of fire*?

c) What is *abyssal plain*?

d) Give an example of coral reef in India.

10. Answer any **one** of the following: 2×1=2

a) Name two deep oceanic trenches of Indian ocean.

b) What do you understand by 'dead sea'?

c) What is *Pelagic* deposit?

11. Answer any **one** of the following questions:

6×1=6

a) Identify and discuss the major controlling factors of ocean salinity.

b) Outline the bottom topography of Indian ocean in brief.

12. Answer any **one** of the following questions:

10×1=10

a) Explain the theories on origin of coral reefs with their merits and demerits.

b) State the major ocean current in Pacific ocean with suitable illustration.

2019

GEOGRAPHY

[HONOURS]

Paper : V

[NEW SYLLABUS]

Full Marks : 75 Time : 4 Hours

The figures in the right-hand margin indicate marks.

Candidates are required to give their answers in their own words as far as practicable.

GROUP–A

(Social and Cultural Geography)

[Marks : 40]

1. Answer any **two** questions: 1×2=2

   a) Who is known as the father of Cultural Geography?

   b) Mention the habitat of the Todas.

   c) Give an example of *Cultural hearth*.

   d) Who propounded 'Sector Theory'?

2. Answer any **two** questions: 2×2=4

   Distinguish between *class* and *caste*.

[Turn Over]

b) Define *Social space*.

c) Differentiate site from *situation*.

d) What is CBD?

3. Answer any **four** questions: 6×4=24

a) Mention any three indicators of *social wellbeing*.

b) Distinguish between race and ethnicity with suitable example from Indian tribes.

c) Specify the role of language and religion in Social Geography of a country.

d) Highlight the salient features of khasi society.

e) Comment on the challenges in the way of life of the Jarwas.

f) How would you explain social stratification in the context of Indian rural settlements?

4. Answer any **one** of the following: 10×1=10

a) Elaborate the scope and content of cultural Geography.

b) Compare between any two theories of Urban Morphology.

GROUP–B

(Population Geography)

[Marks : 35]

5. Answer any **three** questions: 1×3=3

a) Who propounded the theory of *exponential population growth*?

b) Give an example of an *underpopulated* country.

c) What is TFR?

d) What is CBR?

e) What is meant by *transhumance*?

6. Answer any five of the following questions: 2×5=10

a) Differentiate *mortality* from *morbidity*.

b) What do you understand by *optimum* population?

c) Distinguish between *positive* and *preventive* checks after Malthus.

d) Define *surplus* population after Marx.

e) Why is age-sex pyramid constructed?

f) What is family planning?

g) Distinguish between *push* and *pull* factors of international migration.

h) What do you understand by *environmental refugee*?

7. Answer any **two** of the following questions: $6\times2=12$

a) Specify the determinants of *fertility*.

b) Classify migration with suitable examples on various basis.

c) Highlight the salient features of *National Population Policy-2000*.

8. **Answer any one of the following questions:** $10\times1=10$

a) Give an account on global trend and pattern of population growth during last few decades.

b) Critically evaluate the D*emographic Transition Model*.

2019

SEVENTH PAPER

Regional Geography ● Full Marks - 80 ● Time - 4 hours

Section - A (Nature of Geography) (Marks: 30)

1. *Answer any four from the following :-* **1×4=4**

a) Why is Humboldt famous? হামবোল্ট কী কারণে বিখ্যাত ছিলেন?

b) Which philosophy is considered as reaction of determinism?
কোন দর্শনকে নিয়ন্ত্রণবাদের প্রতিক্রিয়া স্বরূপ বিবেচনা করা হয়?

c) Name a product of Critical Revolution.
সমালোচনামূলক বিপ্লবের ফলে উদ্ভূত একটি ফলাফল লেখ।

d) Who wrote "Human Geography: A Welfare Approach"?
"Human Geography: A Welfare Approach" - কে লিখেছিলেন?

e) Name a French Possibilist Geographer contributed in the field of Human Geography.
মানবীয় ভূগোলে অবদানকারী একজন ফরাসী সম্ভাবনাবাদ সমর্থনকারীর নাম লেখ।

f) Name the philosophy which believes man 'as a doll in the lap of nature'. মানুষকে 'প্রকৃতির হাতের পুতুল' - রূপে কোন দর্শন বর্ণনা করেছে?

2. Define any two of the following :- **2×2=4**

a) Positivism — প্রত্যক্ষবাদ।

b) Neo Determinism — নবনিয়ন্ত্রণবাদ।

c) Social well-being — সামাজিক কল্যাণ।

d) Social Darwinism — সামাজিক ডারউইনবাদ।

3. Answer any two of the following :- **6×2=12**

a) Highlight the contribution of Carl Ritter in Geography.
ভূগোলে কার্ল রিটারের অবদানগুলি তুলে ধরো।

b) How concept of areal differentiation influenced the development of Geography in the 20th century? আঞ্চলিক পৃথকীকরণ কীভাবে বিংশ শতাব্দীর ভূগোলের বিকাশকে প্রভাবিত করেছিলো?

c) Distinguish between Behavioural and Humanistic Geography.
আচরণমূলক ভূগোল ও মানবীয় ভূগোলের মধ্যে পার্থক্য লেখ।

4. Answer any one of the following :- **10×1=10**

a) Trace the development of Geography in the ancient and mediaeval periods. প্রাচীন ও মধ্যযুগীয় ভূগোলের বিকাশের সংক্ষিপ্ত বিবরণ দাও।

b) State the merits and demerits of quantitative revolution in Geography with reference to its reactions. সমালোচনাসহ ভূগোলে পরিসংখ্যান বিপ্লবের সুবিধা ও অসুবিধাগুলি ব্যাখ্যা কর।

Section - B (Political Geography) (Marks : 20)

5. Answer any two of the following :- **1×2=2**

a) Who was the founder of Political Geography? রাজনৈতিক ভূগোলের প্রষ্টা কে ছিলেন?

b) Who propounded Rimland Theory? রিমল্যান্ড তত্ত্বটি কার?

c) What do you understand by C.D. Block? C.D. Block বলতে কী বোঝ?

6. Define any one of the following :- **1×2=2**

a) Geopolitics — ভূ-রাজনীতি (b) Frontiers — ফ্রন্টিয়ার

7. Answer any one of the following :- **6×1=6**

a) Comment on the scope of Political Geography.
রাজনৈতিক ভূগোলের পরিধী সম্পর্কে তোমার মতামত দর্শাও।

b) Classify boundaries. 'সীমানা'-এর শ্রেণীবিভাগ কর।

8. Answer any one of the following :- **10×1=10**

a) Explain Heartland theory and its relevance in modern world.
হার্টল্যান্ড তত্ত্বের ব্যাখ্যা দাও ও বর্তমান আধুনিক বিশ্বে এর প্রাসঙ্গিকতা বিচার কর।

b) Evaluate the nature of administrative areas in India with suitable examples. উপযুক্ত উদাহরণ-সহ ভারতের প্রশাসনিক অঞ্চলগুলির প্রকৃতি মূল্যায়ন কর।

Section - C (Economic Geography) (Marks : 30)

9. Answer any four from the following :- **1×4=4**

a) Name a foot-loose industry. একটি অস্থাণু শিল্পের নাম লেখ।

b) What is quaternary sector? কোয়াটারনারী ক্ষেত্র কাকে বলে?

c) Why is Whittlesey remembered? Whittlesey-কে কেন মনে রাখা হয়?

d) What is ubiquitous material? 'সর্বত্রপ্রাপ্ত বস্তু' — কী?

e) Name a centre of Iron and Steel industry in Japan.
জাপানের একটি লৌহ-ইস্পাত শিল্প কেন্দ্রের নাম লেখ।

f) Who propounded the concept of 'economic man"?
'অর্থনৈতিক মানব' ধারণাটির প্রবর্তক কে?

10. Define any two of the following :- **2×2=4**

a) Material Index — পণ্য-সূচক।

b) Isodapane — আইসোডাপেন (সমপরিবহন ব্যয় রেখা)।

c) Least Cost Principle — ন্যূনতম ব্যয় নীতি।

d) Social Forestry — সামাজিক বনসৃজন।

11. Answer any two of the following :- **6×2=12**

a) Narrate the requirements for balanced distribution of population in different sectors of economy. বিভিন্ন অর্থনৈতিক ক্ষেত্রগুলিতে জনসংখ্যার সমবণ্টনের প্রয়োজনীয়তা বর্ণনা কর।

(b) Evaluate the status of paper industry in India.
ভারতের কাগজশিল্পের বর্তমান পরিস্থিতির মূল্যায়ন কর।

(c) State the problems of Petrochemical Industry in India.
ভারতে পেট্রোরসায়ন শিল্পের সমস্যাগুলি বর্ণনা কর।

12. Answer any one of the following :- **10×1=10**

(a) Describe the scope and content of Economic Geography.
অর্থনৈতিক ভূগোলের পরিধি ও বিষয়বস্তু বর্ণনা কর।

(b) Critically evaluate the theory of industrial location put forward by Losch.
Losch প্রদত্ত শিল্পের অবস্থানিকতত্ত্বের সমালোচনামূলক মূল্যায়ণ কর।

2019 **EIGHTEH PAPER**

Regional Geography ● Full Marks - 80 ● Time - 4 hours

Section - A (Contemporary Issues in Geography) (Marks: 30)

1. Answer any four of the following :- **1×4=4**

(a) What is meant by meteorological drought?
আবহাওয়াগত খরা বলতে কী বোঝায়?

(b) Name two natural hazards in Himalayan region.
হিমালয় অঞ্চলের দুটি প্রাকৃতিক দুর্যোগের নাম লেখ।

(c) What is bio-diversity hot spot? 'জীববৈচিত্র্য তপ্ত-বিন্দু' কী?

(d) What is hailstorm? শিলাবৃষ্টি কী?

(e) What is landslide? ভূমিধ্বস কী?

(f) What is supercell thunderstorm? মহাকোষীয় বজ্রবিদ্যুৎসহ বৃষ্টিপাত কী?

2. Answer any two of the following :- **2×2=4**

(a) Differentiate hazard from disaster. দুর্যোগ ও বিপর্যয়ের পার্থক্য লেখ।

(b) What is 'red data' book? 'red data' বই কী?

(c) What do you mean by quasi-natural hazard? আধা প্রাকৃতিক দুর্যোগ বলতে কী বোঝ?

(d) What do you understand by urban flooding? নাগরিক বন্যা বলতে কী বোঝ?

3. Answer any two of the following :- **6×2=12**

(a) Highlight the causes of deforestation in India.
ভারতে অরণ্য নিধনের কারণগুলি তুলে ধরো।

(b) Explain the mechanism of Tornado formation.
টর্নেডো সংগঠনের পদ্ধতিটি ব্যাখ্যা কর।

(c) Bring out the major impacts of drought in India.
ভারতে খরার প্রধান প্রভাবগুলি আলোচনা কর।

(d) Account for the man-made hazard and disaster with Indian examples.
ভারতীয় উদাহরণসহ মনুষ্যসৃষ্ট দুর্যোগ ও বিপর্যয়ের কারণগুলি লেখ।

4. Answer any one of the following :- **10×1=10**

a) Enunciate the major causes of bio-diversity loss and explain the conservation measures. জীব বৈচিত্র্য নাশের প্রধান কারণগুলির বিবরণ দাও এবং তাদের সংরক্ষণের জন্য প্রয়োজনীয় পদ্ধতিগুলির ব্যাখ্যা দাও।

b) Bring out the flood risks and its management strategies in India. ভারতে বন্যার ঝুঁকি ও তার ব্যবস্থাপনা সম্পর্কে সংক্ষিপ্ত বিবরণ তুলে ধরো।

GROUP-B (Remote Sensing and GIS) (Marks: 50)

5. Answer any four of the following :- **1×4=4**

a) What is spectral signature? বর্ণালীগত স্বাক্ষর কী?

b) What is meant by DN value? DN value বলতে কী বোঝ?

c) Define temporal resolution. কালিক বিভেদন-এর সংজ্ঞা দাও।

d) What is GNSS? GNSS কি?

e) Define 'nadir' in aerial photography. মহাকাশ চিত্রে 'নাদির'-এর সংজ্ঞা দাও।

f) What do you understand by FCC? FCC বলতে কী বোঝ?

6. Answer any four of the following :- **2×4=8**

a) Define photogrammetry. photogrammetry-এর সংজ্ঞা দাও।

b) What is active remote sensing? সক্রিয় দূরসংবেদক কী?

c) Differentiate raster data from vector data. রাস্টার ও ভেক্টর উপাত্তের পার্থক্য লেখ।

d) Give two examples of passive sensor used in remote sensing. দূর সংবেদকে ব্যবহৃত পরোক্ষ সংবেদক-এর দুটি উদাহরণ দাও।

e) What is meant by GPS? GPS বলতে কী বোঝ?

f) What is meant by tone and colour in photo interpretation? উপগ্রহচিত্রে ব্যাখ্যায় ঔজ্জ্বল্য ও রঙ বলতে কী বোঝ?

7. Answer any three of the following :- **6×3=18**

a) Highlight the salient features of visual image interpretation. দৃশ্যানুগ চিত্র ব্যাখ্যায় বিশেষ বৈশিষ্ট্যগুলি লেখ।

b) State the role of RS and GIS in Digital Cartography. Digital Cartography-তে RS ও GIS-এর ভূমিকা উল্লেখ কর।

c) Bring out the major applications of RS and GIS in monitoring urban growth. নগরীয় বৃদ্ধি পর্যবেক্ষণে RS ও GIS-এর প্রধান প্রয়োগগুলি লেখ।

d) Highlight the role of shadow, site and association with suitable examples in photo interpretation. চিত্র ব্যাখ্যায় উপযুক্ত উদাহরণসহ ছায়া, অবস্থিতি ও অনুষঙ্গ-এর ভূমিকার উপর আলোকপাত কর।

e) State the salient characteristics of platforms used in remote sensing. দূর সংবেদনে ব্যবহৃত প্ল্যাটফর্মগুলির অন্তর্নিহিত বৈশিষ্ট্যগুলি লিপিবদ্ধ কর।

8. Answer any two of the following :- **10×2=20**

a) Explain the application of RS and GIS in Managing agriculture, forestry and water resources. কৃষি, অরণ্য ও জলসম্পদ রক্ষায় RS ও GIS-এর প্রয়োগ — ব্যাখ্যা কর।

b) Narrate the major stages of remote sensing with necessary illustrations. প্রয়োজনীয় ব্যাখ্যাসহ দূর সংবেদনের প্রধান পর্যায়গুলি বর্ণনা কর।

c) Write an account on the digital techniques of image interpretation. প্রতিবিম্ব ব্যাখ্যায় বিভিন্ন ডিজিটাল টেকনিকগুলির বিবরণ দাও।

2019

NINTH PAPER

Regional Geography ● Full Marks - 80 ● Time - 4 hours

Section - A

1. Answer any seven from the following questions :- **1×7=7**

a) Define formal region. বাহ্যিক অঞ্চলের সংজ্ঞা দাও।

b) What is 'cultural region? সাংস্কৃতিক অঞ্চল কী?

c) What is meant by the core of a region? একটি অঞ্চলের 'কেন্দ্র' (core) বলতে কী বোঝায়?

d) What is *Karewa*? 'কারেওয়া' কী?

e) Mention the lcoation of Indira Gandhi Canal.
ইন্দিরা গান্ধী ক্যানেল-এর অবস্থান উল্লেখ করো।

f) What is nomad? একক বৈশিষ্ট্য অঞ্চল কাকে বলে?

g) What is meant by monocriterion region? একক বৈশিষ্ট্য সম্পন্ন অঞ্চল কাকে বলে?

h) What is nor wester? নরওয়েস্টার কী?

i) What is satellite town? স্যাটেলাইট টাউন কী?

2. Answer any six from the following questions :- **2×6=12**

a) State the composition of laterite soil.
ল্যাটেরাইট মৃত্তিকার গঠনগত উপাদানটি লেখ।

b) Mention any two criteria of an agricultural region.
কৃষি অঞ্চলের যে কোন দুটি বৈশিষ্ট্য উল্লেখ কর।

c) What is badland topography? 'বদ্ধভূমি' কাকে বলে?

d) What is Terai soil? তরাই মৃত্তিকা কী?

e) What is micro level regional planning? ক্ষুদ্রস্তরের আঞ্চলিক পরিকল্পনা কাকে বলে?

f) Define functional region with example. কার্যকরী অঞ্চলের উদাহরণসহ সংজ্ঞা দাও।

g) What is Ramsar site? 'রামসার ক্ষেত্র' কী?

h) What is Rajmahal Formation? রাজমহল ফরমেশন কী?

3. Answer any three from the following questions :- 7×3=21

a) Specify the major attributes of a region. অঞ্চলের প্রধান বৈশিষ্ট্যগুলি নির্দেশ কর।

b) Highlight the salient climatic and floral characteristics of Marusthali. মরুস্থলীর জলবায়ুগত ও উদ্ভিদগত বৈশিষ্ট্যগুলি তুলে ধরো।

c) Ontline the scope of small scale industry in West Bengal. পশ্চিমবঙ্গের ক্ষুদ্র-শিল্পের পরিধি সম্পর্কে বিবরণ দাও।

d) Briefly describe the strategic plan for managing Indian Sundarban Delta. ভারতীয় সুন্দরবন বদ্বীপ অঞ্চলের ব্যবস্থাপনার একটি সংক্ষিপ্ত বর্ণনা দাও।

e) Mention the major indicators of regional imbalances. আঞ্চলিক অসাম্যতার প্রধান প্রধান নির্দেশকগুলি উল্লেখ কর।

4. Answer any four from the following question : 10×4=40

a) Discuss the methods of delineation of planning region with examples from India. ভারতীয় উদাহরণসহ পরিকল্পনা অঞ্চল চিহ্নিতকরণের পদ্ধতিগুলি আলোচনা কর।

b) Critically evaluate the major strategies undertaken to reduce regional imbalances in India. ভারতে আঞ্চলিক অসাম্যতা দূরীকরণে গৃহীত প্রধান পদক্ষেপগুলি সম্পর্কে সমালোচনামূলক ব্যাখ্যা দাও।

c) Bring out the salient features of evolution of regional planning in India through plan period. পরিকল্পনাকালীন সময় থেকে ভারতের আঞ্চলিক পরিকল্পনার বিবর্তন-এর প্রধান বৈশিষ্ট্যগুলি তুলে ধরো।

d) State the growth and development of National Capital Region in India. ভারতে জাতীয় রাজধানী অঞ্চলের বৃদ্ধি ও বিকাশ আলোচনা কর।

e) Account for the economic significance of Chotanagpur plateau. ছোটনাগপুর মালভূমি অঞ্চলের অর্থনৈতিক তাৎপর্য লিপিবদ্ধ কর।

f) Elaborate the scope of commercial agriculture in West Bengal. পশ্চিমবঙ্গের বাণিজ্যিক কৃষি গড়ে ওঠার কতখানি সুযোগ আছে তা বিশদে আলোচনা কর।

2019

TENTH PAPER

SET-I/NS

[PRACTICAL]

Attempt all the questions.

Full Marks : 80 **Time : 6 Hours**

The figures in the right-hand margin indicate marks.

Answer all the questions

1. Represent the following data (Table-1) by 'pie diagrams" in MS-Excel with proper heading and legend. 10

Table-1 : Estimated requirement of crops in West Bengal during 12th Plan Period (in Lakh MT)

Year	Rice	Cereals	Pulses	Food Grains
2013-14	144.89	166.95	12.87	179.82
2014-15	146.15	168.41	12.98	181.39
2015-16	147.43	169.88	13.10	182.98
2016-17	148.75	171.70	13.21	184.61
2017-18	150.00	172.24	14.05	185.21

2. Based on the following data (Table-2), Draw a 'Scatter diagram' in MS-Excle. Fit a trend-line showing regression equation and find out the 'r' value. 10+3=13

Table-2 : Year-wise wheat production in India

Year	Production ('000 MT)
2007	75807
2008	78570
2009	80679
2010	80804
2011	86874
2012	94882
2013	93506
2014	95850
2015	86530
2016	87000
2017	98210
2018	99700

3. 3. Calculate Mean, Median, Mode and Standard Deviation of the fol-

lowing frequency distribution relating to the marks secured by students in Geography in MS-Excel : 4×3=12

Table-3

Marks	No. of Students
0-5	1
5-10	6
10-15	8
15-20	7
20-25	11
25-30	10
30-35	10
35-40	17

4. Carry out a Dumpy Level survey at an interval of 5 metres along a given line MN of the length of 50 metres with one change point. Enter the readings in a neatly drawn field-book and calculate the R.L. of the different points, where the B.M. of the last station is 25.50 metres. Draw the profile with a suitable scale. 15+5=20

OR

(Question for inclement weather)

The following readings have been obtained from the field by Dumpy Level Survey :

Station	Distance in Metre	Staff Readings in Metre		
		B.S.	I.S.	F.S.
A	0	3.520		
B	3.8		3.845	
C	12.4		3.120	
D	14.8		3.455	
E	19.2		2.265	
F	22.3		3.635	
G	25.4		4.115	
H	28.1	3.035		3.845
I	33.4		2.655	
J	35			3.200

The instrument was shifted at H. Also, B.M. of the station H is 39.550 metres. Find out the R.L. of all the stations. Draw the profile with a suitable scale. Comment on the nature of the grotind. 9+9+2=20

5. Interpret the given weather map (Map-1) under the following heads :
   i) Wind. ii) Atomospheric pressure. iii) Sky condition. 5+5+5=15
6. Laboratory Notebook and Viva-voce. 5+5=10

2019

TENTH PAPER

[PRACTICAL]

SET-III/NS

Full Marks : 80 **Time : 6 Hours**

The figures in the right-hand margin indicate marks.

Answer all the question

1. Based on the following data (Table-1) draw 'line graphs' in MS-Excel with proper heading and legend. 10

Table-1 : Seed replacement rate (SRR) of different crops during 2011-2012, 2012-2013 and target during 2013-2014 in West Bengal.

Name of Crop	2011-2012 (%)	2012-2013 (%)	2013-2014 (Target) in %
Paddy	33.6	34.0	35.0
Wheat	43.4	45.7	47.0
Maize	29.0	30.0	33.0
Gram	26.9	27.92	33.0
Kalai(urd)	35.6	36.47	37.0
Moong	33.6	33.39	35.0
Khesari	21.1	22.0	50.22
Lentil	29.6	29.8	32.99
Pigeon Pea	45.0	46.0	46.50
Ground-nut	40.4	41.0	44.47

2. Based on th following data (Table-2) draw a 'scatter diagram' in MS-Excel and fit a trend line showing regression equation and find out the 'r' value. 10+3=13

Table-2 : Per Capita GNP ($) and Infant Mortality ('000) of 12 countries in 1965

Country	Per Capita [GNP ($)]	Infant Mortality ('000)
1	56	99
2	68	97
3	105	71
4	121	70
5	134	139
6	202	111
7	330	104
8	760	71
9	999	26
10	1050	39
11	1228	25
12	1688	32

3. The age distribution of the villagers of Ranipur village situated in Bihar has been tabulated in Table-3. Calculate in MS-Excel mean, median, mode and standard deviation of the distribution. 4×3=12

Table-3

Age in Years	No. of Persons
0-9	5
10-19	17
20-29	26
30-39	35
40-49	43
50-59	18
60-69	17
70-79	10

4. i) Prepare a closed traverse survey for a given triangular area by a prismatic compass and enter the observed readings in a neatly drawn field-book.

ii) Find out the corrected bearings.

iii) Plot the traverse on a suitable scale.

iv) Adjust closing error as per Bowditch's rule. 8+4+6+2=20

OR

(Question for inclement weather)

The following readings (in metre) were collected during a field survey with a Dumpy Level along a line AB (length-55 metres) at 5 metres interval : 1.520 (A), 1.895, 2.450, 1.935, 2.120, 3.130, 1.990, 0.110, 0.110, 2.580, 2.230. 2.560(B)

The instrument was shifted at 5th station B.M. of the change point - 30.500 metres. Enter the readings in a neatly drawn field-book. Find out the R.L. of all the stations. Draw the profile with a suitable scale. Comment on the nature of the ground. 6+6+6+2=20

5. Interpret the given weather map (Map-1) under the following heads :

i) Wind.

ii) Atmospheric pressure.

iii) Sky condition. 5+5+5=15

6. Laboratory Notebook and Viva voce. 5+5=10

2019

TENTH PAPER

[PRACTICAL] **SET-V/NS**

Full Marks : 80 **Time : 6 Hours**

The figures in the right-hand margin indicate marks.

Answer all the question

1. Based on the given data (Table-1) draw 'bar diagram' to represent the following data in MS-Excel with proper heading and legend. 10

Table-1 : State-wise fish production (2011)

States	production in '000 tonnes		
	Marine	Inland	Total
West Bengal	200.00	1015.70	1215.70
Odisha	175.50	215.40	390.90
Andhra Pradesh	201.45	612.78	814.23
Tamil Nadu	363.10	112.00	475.10
Kerala	602.54	102.45	704.99

2. Based on the following data (Table-2) draw a 'scatter diagram' in MS Excel. Fit a trend line showing regression equation and find out the 'r' value. 10+3=13

Table-2 : State-wise % distribution of rural and urban population in India (2011)

Serial Number	Name of the States	Population Distribution (2011)	
		Rural (%)	Urban (%)
1	Andhra Pradesh	66.50	33.50
2	Arunachal Pradesh	77.30	22.70
3	Assam	86.00	14.00
4	Bihar	88.70	11.30
5	Gujarat	57.40	42.60
6	Haryana	65.20	34.80
7	Himachal Pradesh	89.90	10.10
8	Jammu and Kashmir	72.80	27.20
9	Jharkhand	76.00	24.00
10	Meghalaya	79.90	20.10
11	Kerala	52.30	47.70
12	Nagaland	71.00	29.00

3. The. I.Q. of the students of Standard-II of an English medium school of Delhi has been calculated as follows :

I.Q. of the Students

98 106 92 102 88 87 97 102 98 75 94 115

104 90 109 79 95 104 112 91 109 67 93 100

118 109 79 100 118 100 111 85 127 85 85 142 105

85 108 82 85 111 99 116 103 102

i) In MS-Excel prepare a frequency distribution table showing number of students per I.Q. size class.

ii) From the prepared frequency distribution table calculate mean and median in MS Excel. 6+(3+3)=12

4. i) Prepare a closed traverse survey for a given triangular area by a prismatic compass and enter the observed readings in a neatly drawn field-book.

ii) Find out the correced bearings.

iii) Plot the traverse on a suitable scale.

iv) Adjust closing error as per Bowditch's rule. 8+4+6+2=20

OR

(Questions for inclement weather)

The following readings (in metre) were collected during a field survey with a Dumpy Level along a line XY (length -60 metres) at 5 metres interval :

1.820 (X), 1.205, 2.550, 3.335, 3.320, 3.330, 2.990, 1.110, 0.110, 0.980, 1.530, 2.825, 3.000 (Y).

The instrument was shifted at 6th station. B.M. of the change point is 32.550 metres. Enter the readings in a neatly drawn field-book. Find out the R.L. of all the stations. Draw the profile with a suitable scale. Comment on the nature of the ground. 6+6+6+2=20

5. Answer the following questions from the given weather map (Map-1) :

i) State the relationship between distribution of atmospheric pressure and wind.

ii) Write about the sky condition. 10+5=15

6. Laboratory Notebook and Viva voce. 5+5=10

2019

ELEVENTH PAPER

[PRACTICAL] **SET-I/NS**

Full Marks : 80 **Time : 6 Hours**

The figures in the right-hand margin indicate marks.

Answer all the question

1. a) Draw neat graticule of Polar Zenithal Stereographic Projection for an area extending from 30°N to 70°N and 60°W to 160°W at an interval of 10° on a scale of 1:100,000,000.

b) What is Orthomorphic Projection?

c) Mention the uses of Cylindrical Equal Area Projection. 16+2+2=20

2. Draw a superimposed profile with four cross sections covering 9 cm×9 cm, area on the given toposheet (R.F.-1:50,000). Interpret the same. 8+2=10

3. Delineate the given drainage basin from the toposheet (R.F.=1:50,000) and Prepare a slope map after Wentworth of the basin. Interpret the slope map. (3+14)+3=20

GROUP-B

4. Field Report and Viva Voce. 10+10=20
5. Laboratory Notebook and Viva Voce. 5+5=10

2019

ELEVENTH PAPER

[PRACTICAL] **SET-II/NS**

Full Marks : 80 **Time : 6 Hours**

The figures in the right-hand margin indicate marks.

Answer all the question

GROUP-A

1. a) Draw neat graticule of Mercator's Projection for an area extending from 60°N to 60°S and 30°W to 90°E at an interval of 15° on a scale of 1:125,000,000.
   b) Mention any two properties of Mercator's Projection.
   c) What is Rhumb Line? 16+2+2
2. Draw a Composite profile with four cross sections covering 9cm×9 cm, area on the given toposheet (R.F.-1:50,000). Interpret the same. 8+2=10
3. Delineate the given drainage basin from the toposheet (R.F.=1:50,000) and compute stream ordering after Strahler. Comment on the nature of Stream ordering of the given basin. (3+14)+3=20

GROUP-B

4. Field Report and Viva Voce. 10+10=20
5. Laboratory Notebook and Viva Voce. 5+5=10

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2019

GEOGRAPHY

[HONOURS]

Paper : VI

[PRACTICAL]

[NEW SYLLABUS]

SET–I

Full Marks : 50 Time : 4 Hours

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 all the questions.

GROUP–A

1. a) What is Z-score?

   b) Mention the implications of Z-score.

   1+2=3

2. a) Compute frequency distribution into six classes for the given set of data.

   Percentage of households having toilet facilities of 45 Villages:

   75.5, 28.5, 28.9, 53.5, 47.3, 79.2, 22.8, 44.4, 23.1

   45.1, 54.8, 38.4, 56.4, 66.6, 42.6, 21.9, 39.8, 53.3

   36.5, 40.7, 48.8, 77.4, 26.6, 58.1, 58.5, 68.2, 34.2

   44.1, 48.1, 27.5, 49.2, 41.3, 37.0, 72.0, 34.2, 46.6

   44.7, 65.0, 43.2, 63.5, 51.2, 48.9, 60.9, 32.7, 45.5

b) From the frequency distribution table :

i) Calculate Mean

ii) Calculate Median

iii) Draw an Ogive (Less than type)

5+(3+3+3)=14

3. Calculate Coefficient of Variation of the given rainfall data for weather stations A and B separately (Table No.1). Which weather station is more consistent in terms of rainfall? 5+1=6

Table No.1: Rainfall distribution across Months at Station A and Station B (2017)

Months	Rainfall in mm	
	Station-A	Station-B
January	24.25	1.20
February	18.11	3.52
March	16.65	4.36
April	6.18	6.27
May	3.71	8.80
June	2.60	19.50
July	2.23	35.50
August	4.44	38.52
September	8.90	24.06
October	13.67	15.07
November	20.33	5.23
December	22.10	3.56

4. From the given set of data (Table No.2)

a) Draw a time series graph.

b) Fit a trend line by 3-year moving average method and interpret the trend.

Table No.2: Area under Pulses in India

Years	Area under Pulses (Million Hectares)
2007-08	23.63
2008-09	22.09
2009-10	23.28
2010-11	26.40
2011-12	24.46
2012-13	23.26
2013-14	25.21
2014-15	23.55
2015-16	25.26

3+3+2=8

5. From the given set of data (Table No.3)

a) Draw a scatter diagram.

b) Fit a trend line by least squares method.

c) Interpret the nature of relationship.

3+4+2=9

Table No.3: Households having Pucca House and Latrine in eight villages

Percentage of Households having Pucca House	Percentage of Households having Latrine
35.28	38.56
39.10	32.60
16.95	22.21
32.87	40.09
45.30	56.47
52.33	53.74
28.44	26.60
12.45	24.40

GROUP–B

6. Laboratory Notebook and Viva-voce. 5+5=10