# B.Sc. 1st Semester (Honours) Practical Examination, 2019-20 GEOGRAPHY 

Course ID : 11922
Course Code : SH/GEO/102C-2(P)
Course Title : Cartographic Techniques
Time: 3 Hours
Full Marks: 40

> The figures in the margin indicate full marks. Candidates are required to give their answers in their own words as far as practicable.

Answer all questions.

## SET-III

1. A map is drawn on a scale of 1 cm to 2 km . The map is reduced $\frac{1}{4}$ of its original size. Calculate the R.F. of the reduced map and with this draw a linear scale with Primary division 10 km and Secondary division 2 km .
2. (a) Draw the graticule of polar zenithal Gnomonic projection for a map of Greenland on a scale of $1: 20,000,000$ at an interval of $5^{\circ}$. Extension : $55^{\circ} \mathrm{N}-90^{\circ} \mathrm{N}$ and $75^{\circ} \mathrm{W}$ to $15^{\circ} \mathrm{W}$.
(b) Classify map projection on the basis of preserved qualities. $8+2=10$
3. Write short notes on any two of the following:
$2 \times 2=4$
(a) Vernier Constant
(b) Azimuthal projection
(c) Importance of Bench Mark in levelling.
4. Make a levelling Survey by Dumpy level to obtain the reduced levels of 9 points located on the given quadriangular area ABCD (as per plan shown in the attached sketch). Given B.M. at E (the meeting point of the diagonals) $=30 \mathrm{~m}$. plot the quadriangular area with the help of magnetic bearing of one side obtained by a prismatic compass. Draw a contour plan of the area showing at least 3 contours.

Field plan

5. Laboratory Notebook and Viva voce

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## Course ID : 11922

## SET-III

## Instructions to the Examiners.

1. The examiners are requested to rectify the printing mistakes, if any, in the question paper before its distribution.
2. Setting of the Survey instruments is the responsibility of the examinees, but the examiners are requested to give specific instructions for field survey.
3. The examiners may provide two or more sets of Survey instruments.
4. An examinee may be instructed to complete the field work within 35 minutes.
5. Distribution of marks for Q.No. 4 :

Field work : 4
Correct drawing of the quadriangular area with 9 points : 2
Drawing of contours with suitable interval : 4
6. For Q. No. 4 : alternative Question (in case of inclement weather only):

Compute the entries marked ( $\times$ ) from the level book page given below:

| Stn | Dist. in m | B.S. | I.S. | F.S. | R.L. in m. |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 0 | $\times$ |  |  | $24 \cdot 65$ |
| 2 | $3 \cdot 5$ |  | $\times$ |  | $24 \cdot 84$ |
| 3 | 7.0 |  | $3 \cdot 50$ |  | $25 \cdot 02$ |
| 4 | $10 \cdot 5$ |  | $3 \cdot 30$ |  | $\times$ |
| 5 | 14.0 |  | $3 \cdot 35$ |  | $\times$ |
| 6 | 17.5 | $\times$ |  | $\times$ | 25.00 |
| 7 | 21.0 |  | $6 \cdot 13$ |  | $25 \cdot 15$ |
| 8 | $24 \cdot 5$ |  | $5 \cdot 95$ |  | $\times$ |
| 9 | 28.0 |  | 5.90 |  | 25.38 |
| 10 | 31.5 |  | $\times$ |  | $25 \cdot 48$ |
| 11 | $35 \cdot 0$ |  |  | $\times$ | $\times$ |
| $\sum B S=10.15$ |  |  | $\Sigma F S=9 \cdot 22$ |  |  |

Draw a topographic profile along the line of Survey.
7. For Question No. 5 an examinee can be interviewed for a minimum of 5 minutes and maximum upto 10 minutes.

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

## SET-IV

1. (a) Draw a vernier scale to read $11^{\circ} 37^{\prime}$; given 19 main scale divisions are equal to 20 vernier scale divisions and the value of one smallest main scale division is $20^{\prime}$ (The scale may be drawn in a straight line)
(b) What is retrograde vernier?
2. (a) Draw the graticule of polyconic projection for a map of Europe on a scale of 1:40,000,000 at an interval of $10^{\circ}$. Extension: $35^{\circ} \mathrm{N}$ to $75^{\circ} \mathrm{N}$ and $10^{\circ} \mathrm{W}$ to $60^{\circ} \mathrm{E}$.
(b) Define the term "homolographic".
3. Answer any two of the following:
$2 \times 2=4$
(a) What is R.F. Scale?
(b) What is non-perspective projection?
(c) Explain bench mark and datum surface.
4. Find out the height of an object with the help of Transit Theodolite where the base is inaccessible:
(a) Prepare a field book with a field sketch.
(b) Calculate the height of the object.
(c) Plot the same on a suitable scale.
$4+4+2=10$
5. Laboratory Notebook and Viva voce
$5+5=10$

# B.Sc. 1st Semester (Honours) Practical Examination, 2019-20 GEOGRAPHY 

## Course ID : 11922

Course Code : SH/GEO/102C-2
Course Title : Cartographic Techniques
SET-IV

## Instructions to the Examiners.

1. The examiners are requested to rectify the printing mistakes, if any, in the question paper before its distribution.
2. Setting of the Survey instruments is the responsibility of the examinee, but the examiners are requested to give specific instructions for field survey.
3. The examiners may provide two or more sets of Survey instruments.
4. An examinee may be instructed to complete the field work within 35 minutes.
5. Alternative Question for Q.No. 4 (in case of inclement weather only):

To determine the elevation of the top of a flag staff, the following observations were made:

| Instrument Station | Reading on B.M. | Vertical angle | Remarks |
| :---: | :---: | :---: | :---: |
| A | 1.266 m | $10^{\circ} 48^{\prime}$ | R.L. of B.M. |
| B | 1.086 m | $7^{\circ} 12^{\prime}$ | $=248.362 \mathrm{~m}$ |

Stations A and B and the top of the flag staff were in the same vertical plane. Find the elevation of the top of the flag staff, if the distance between A and B was 50 m .
6. For Question No. 5 an examinee can be interviewed for a minimum of 5 minutes and maximum of 10 minutes.

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## Course ID : 11922

# Course Code : SH/GEO/102C-2 

## Course Title : Cartographic Techniques

Time: 3 Hours
Full Marks: 40
The figures in the margin indicate full marks.
Candidates are required to give their answers in their own words
as far as practicable.
Answer all questions.

## SET-V

1. The R.F. of a cadastral map in $1: 3960$. Draw a comparative linear scale to read 100 yeards $/ 100 \mathrm{~m}$ in the primary and 20 yards $/ 20 \mathrm{~m}$ in the secondary division.
2. (a) Draw the graticule of Cylindrical Equal Area Projection for a region extending from $20^{\circ} \mathrm{N}$ to $20^{\circ} \mathrm{S}$ latitudes and from $95^{\circ} \mathrm{E}$ to $145^{\circ} \mathrm{E}$ longitudes at an interval of $5^{\circ}$ on a scale of $1: 25$ million.
(b) Find out the projected length of the equator on this projection and its actual ground distance.
3. Answer any two of the following:
(a) What is scale enlargement?
(b) What is Loxodrome?
(c) What is line of collimation?
4. Run a Dumpy level Survey on eight Stations along a given line of 21 m long fixed on the ground:
(a) Prepare a field book and calculate the reduced levels assuming reduced level of first station as 100.00 m .
(b) Draw a profile on the basis of the calculated reduced levels showing datum line on a suitable scale.

# B.Sc. 1st Semester (Honours) Practical Examination, 2019-20 GEOGRAPHY 

## Course ID : 11922 <br> Course Code : SH/GEO/102C-2

Course Title : Cartographic Techniques
SET-V

## Instructions to the Examiners.

1. The examiners are requested to rectify the printing mistakes, if any, in the question paper before its distribution to the examinees.
2. Setting of the Survey instruments is the responsibility of the examinees, but the examiners are requested to give specific instructions to the examinees for field survey.
3. Maximum 30 minutes can be given to the examinees to complete the field work.
4. The examiners may provide two or more sets of survey instruments.
5. Alternative Question for Q.No. 4 (in case of inclement weather only):

The following consecutive readings were taken with a level and 3 m levelling staff on a continuously sloping ground at a common interval of $20 \mathrm{~m}: 0 \cdot 602,1 \cdot 234,1 \cdot 860,2 \cdot 574,0 \cdot 238$, $0 \cdot 914,1 \cdot 936,2 \cdot 872,0 \cdot 568,1 \cdot 824,2 \cdot 722$. The reduced level of the first point was $192 \cdot 122 \mathrm{~m}$. Prepare a level book and calculate the reduced levels of the points. Draw a longitudinal profile along the line of survey.
$3+3+4=10$
6. The examiners are requested to take Viva voce of an examinee for a minimum of 5 minutes and maximum of 10 minutes. .

# B.Sc. 1st Semester (Honours) Practical Examination, 2019-20 GEOGRAPHY 

Course ID : 11922
Course Code : SH/GEO/102C-2(P)
Course Title : Cartographic Techniques
Time: 3 Hours
Full Marks: 40
The figures in the margin indicate full marks.
Candidates are required to give their answers in their own words
as far as practicable.
Answer all questions.

## SET-I

1. Draw a vernier scale to read $3 \cdot 33^{\prime \prime}$ when 09 small main scale divisions are equal to 10 vernier scale divisions and the value of one small main scale division is $0.01^{\prime \prime}$.
2. (a) Draw the graticule of sinusoidal projection for a map of South America on a scale of 1:40 M at an interval of $10^{\circ}$. Extension : $20^{\circ} \mathrm{N}-60^{\circ} \mathrm{S}$ and $90^{\circ} \mathrm{W}$ to $30^{\circ} \mathrm{W}$.
(b) State the properties of Sinusoidal projection. 8+2=10
3. Write short notes on any two of the following:
$2 \times 2=4$
(a) Diagonal scale
(b) Merits of simple conical projection with one Standard Parallel.
(c) Trunnion axis
4. (a) Make a closed Traverse Survey by Prismatic Compass on four stations fixed on the ground and record positions of four objects marked on the field.
(b) (i) Find out the corrected bearings and draw the closed traverse with necessary corrections.
(ii) Find out the area of the closed traverse.
(iii) Show the position of the given objects on the corrected traverse.
$4+2+2+2=10$
5. Laboratory Notebook and Viva voce
$5+5=10$

# B.Sc. 1st Semester (Honours) Practical Examination, 2019-20 GEOGRAPHY 

Course ID : 11922
Course Code : SH/GEO/102C-2(P)
Course Title : Cartographic Techniques
SET-I

## Instructions to the Examiners.

1. The examiners are requested to rectify the printing mistakes, if any, if the question paper before its distribution.
2. Setting of the Survey instruments is the responsibility of the examinees, but the examiners are requested to give specific instructions for field survey.
3. The examiners may provide two or more sets of Survey instruments.
4. An examinee may be instructed to complete the field work within 30 minutes.
5. For Q. No. 4 : alternative Question (in case of inclement weather):

In a prismatic compass survey, the following data as shown in the table below are collected:

| Station | Line | Distance(m) | F.B. | B.B. |
| :---: | :---: | :---: | :---: | :---: |
| M | MN | $29 \cdot 8$ | $73^{\circ} 15^{\prime}$ | $255^{\circ} 0^{\prime}$ |
| N | NO | $31 \cdot 6$ | $137^{\circ} 30^{\prime}$ | $316^{\circ} 45^{\prime}$ |
| O | OP | $27 \cdot 1$ | $258^{\circ} 0^{\prime}$ | $77^{\circ} 45^{\prime}$ |
| P | PM | $24 \cdot 3$ | $323^{\circ} 15^{\prime}$ | $142^{\circ} 15^{\prime}$ |

- Find out the corrected bearings.
- Draw the closed traverse with necessary correction.
- Find out the included angles.
- Find out the area of the closed traverse.
- What are the draw-backs of prismatic compass survey?
$2+2+2+2+2=10$

6. For Question No. 5 an examinee can be interviewed for a minimum of 5 minutes and maximum of 10 minutes.

# B.Sc. 1st Semester (Honours) Practical Examination, 2019-20 GEOGRAPHY 

## Course ID : 11922

# Course Code : SH/GEO/102C-2 

## Course Title : Cartographic Techniques

Time: 3 Hours
Full Marks: 40
The figures in the margin indicate full marks.
Candidates are required to give their answers in their own words as far as practicable.

Answer all questions.

## SET-II

1. Draw a diagonal scale to read 3 yeards 2 feet 8 inches. R.F. 1:40
2. (a) Draw the graticule of simple conical projection with one standard parallel for an area extending from $30^{\circ} \mathrm{N}$ to $70^{\circ} \mathrm{N}$ and $130^{\circ} \mathrm{E}$ to $170^{\circ} \mathrm{E}$ at an interval of $10^{\circ}$ on a scale of 1:75,000,000.
(b) Define constant of the cone.
$8+2=10$
3. Write short notes on any two of the following:
$2 \times 2=4$
(a) Statement scale
(b) Orthomorphic projection
(c) Reconnaissance Survey
4. (a) Prepare a field book to determine the height of the given object (by theodolite) in the field having accessible base.
(b) Calculate the height and
(c) Represent it graphically by plotting it on a suitable scale.
$4+3+3=10$
5. Laboratory Notebook and Viva voce
$5+5=10$

# B.Sc. 1st Semester (Honours) Practical Examination, 2019-20 GEOGRAPHY 

Course ID : 11922<br>Course Code : SH/GEO/102C-2<br>Course Title : Cartographic Techniques<br>SET-II

## Instructions to the Examiners.

1. The examiners are requested to rectify the printing mistakes, if any, in the question paper before its distribution.
2. Setting of the Survey instruments is the responsibility of the examinees, but the examiners are requested to give specific instructions for field survey.
3. The examiners may provide two or more sets of Survey instruments.
4. An examinee may be instructed to complete the field work within 35 minutes.
5. For Q. No. 4 : alternative Question (in case of inclement weather only):

The following measurements of angles and distance have been observed with the help of a Transit Theodolite.

Calculate the height of the object ' $O$ ' with respect to A and horizontal distance between the station A and the base of the object ' O '.

Vertical angle of the object from $\operatorname{Stn} \mathrm{A}=13^{\circ} 30^{\prime}$
Vertical angle of the object from Stn $B=18^{\circ} 15^{\prime}$
Horizontal distance between Stn. A \& B $=20 \mathrm{~m}$.
Height of the Instrument at $A \& B=1.5 \mathrm{~m}$.
6. For Question No. 5 an examinee can be interviewed for a minimum of 5 minutes and maximum of 10 minutes.

# B.Sc. 1st Semester (Honours) Examination, 2019-20 <br> GEOGRAPHY 

## Course ID : 11914

Course Code : SH/GEO/103GE-1

## Course Title: Physical Basis of Earth

Time: 2 Hours
Full Marks: 40
The figures in the margin indicate full marks.
Candidates are required to give their answers in their own words
as far as practicable.
দক্ষিণ প্র/ন্তস্থ সংখাগ্গুলি প্রশ্নের পূণমানের নিদ্দেশক।
পরীক্ষার্থীদের যथাসম্টব নিজের ভাষায় উত্তর দিতে হবে।

## Section-A

(Short answer type)
Answer any five questions form the following: $2 \times 5=10$
যে কেনো পাচটি প্রশ্নের উত্তর দাও :

1. (a) What are the major glacial phases of the Pleistocene period?

Pleistocene উপযুগের প্রধান হিমযুগগুলি কী কী?
(b) What do you mean by 'Level of Compensation'?
‘প্রতিবিধান তল’ বলতে কী বোঝো?
(c) Why does Asthenosphere is called 'Low Velocity Zone'?

Asthenosphere-কে Low Velocity Zone কেন বলা হয়?
(d) What is Benioff Zone?

বেনিঅফ জোন বলতে কী বোরো?
(e) What is Magnetic anomaly?

টোম্বকীয় বৈসাদৃশ্য কাকে বলে?
(f) Outline why 'Jig-saw-Fit' is taken as a proof of Continental Drift.
‘Jig-saw-Fit’-কে কেন মহাদেশীয় সঞ্চরণের একটি প্রমাণ হিসেবে ধরা হয়, তার রূপরেখা দাও।
(g) Define 'Fold'.

ভাঁজের সংজ্ঞা দাও।
(h) What do you mean by core of the earth?

পৃথিবীর কেন্দ্র বলতে কী বোবো?

## Section-B

(Analytical type)
2. Answer any five questions taking at least one from each unit and not more than two.

$$
4 \times 5=20
$$

প্রতিটি একক থেকে কমপক্ষে একটি কিন্তু অনধিক দুটি প্রশ্নের উত্তরসহ মোট পাঁচটি প্রশ্নের উত্তর দাও।

## Unit-I

(a) Briefly discuss the Nebular Hypothesis of Laplace regarding the origin of the earth. পৃথিবীর উৎপত্তি সম্পর্কে Laplace-এর নীহারিকা মতবাদটি ব্যক্ত করো।
(b) Differentiate between the theories of Isostasy as proposed by Airy and Pratt. সমস্থিতি সংত্রান্ত Airy এবং Pratt-এর মতবাদের মূন পার্থকশগুলির উল্লেখ করো।
(c) Mention the major Geological features of Cenozoic era.

Cenozoic যুগের প্রধান ভূতাত্ত্বিক বৈশিষ্ট্যগুি উল্লেখ করো।

## Unit-II

(d) Explain in brief the processes of formation of Mid-oceanic ridge. মধ্যমহাসাগরীয় শxলশিরার উৎপত্তি কীভাবে হয় তা সংক্ষেপে ব্যাখ্যা করো।
(e) Discuss epirogenesis movement and related landforms.

মহীভাবক প্রক্রিয়া ও সৃষ্ট ভূমিরূপগুলি আলোচনা করো।
(f) In what way may convection currents in the mantle be responsible for plate motion? প্লেটের চলনে গুরুমণ্ডেে পরিচলন স্রোতের ভূমিকা কী?

## Unit-III

(g) Discuss the evolution of drainage and landform features in folded structure.

ভঙ্গিল গঠনयুক্ত অঞ্চনে জলনির্গম প্রণালী ও ভূমিরূপের উদ্ভব ব্যাখ্যা করো।
(h) Explain the formation of 'Cuesta' and 'Hogback'.
‘‘ুুয়েস্তা’ ও ‘হগব্যাক’-এর উৎপত্তি ব্যাখ্যা করো।
(i) Mention major parts of an ideal hill slope.

একটি আদর্শ ভূমিঢালের বিভিন্ন অংশগুলির উল্লেখ করো।

## Section-C

(Broad answer type)
3. Answer any one question from the following:

যে কোনো একটি প্রশ্নের উত্তর দাও:
(a) Give an detail account of earth interior with suitable diagram. পৃথিবীর আভ্যণ্তরীণ গঠনের সচিত্র বর্ণনা দাও।
(b) Discuss about the evidences of continental drift.

মহীসঞ্চরণ মতবাদের স্বপক্ষের প্রমাণঙ্ডলি লেখো।
(c) Elaborate the Landscape evolution model as proposed by Penk.

Penk-এর ভূমিরূপ বিবর্তন মডেলটির সংক্ষিপ্ত বর্ণনা দাও।

## B.Sc. 1st Semester (Programme) Examination, 2019-20 GEOGRAPHY

# দক্মিণ প্রান্তস্থ সংখাগ্ণলি প্রশ্নের পূণমানের নির্দেশক। <br> পরীক্থার্থীদের যथাসম্তব নিজের ভাষায় উত্তর দিতে হবে। <br> <br> Section-A <br> <br> Section-A <br> (Short answer type) 

1. यে কোনো পাঁচট প্রশ্নের উত্তর দাও:
(a) সমস্থিতি বলতে কী বোবো?
(b) ভূকম্পীয় ছায়া এলাকা বলতে কী বোঝো?
(c) সিয়াল (SIAL) ও সিমা (SIMA) উভয়ের মধ্যে পার্থক্য লেখো।
(d) পাত সং্থ্থান তথ্য বলতে কী বোঝো?
(e) প্যানজিয়া ও প্যানথালাসা कী?
(f) অভিসারি পাত সীমানা কাকে বলে ?
(g) মোনাড্নক কী?
(h) পেডিপ্লেন বলতে কী বোবো?

## Section-B

2. প্রতিটি Unit থেকে কমপক্ষে একটি প্রশ্ন নিয়ে মোট পাঁটি প্রশ্নের উত্তর দিতে হবেঃ

## Unit-I

(Earth: Origin and Evolution)
(a) ভূততত্ত্বিক সময় সারণী ও ভূতাত্ত্বিক ঘটনাবলীর সংক্ষিপ্ত বর্ণনা দাও।
(b) ভূকশ্পীয় তরঞ্গের উপর ভিত্তি করে পৃথিবীর আভ্যণ্তরীণ গঠন আলোচনা করো।
(c) সমস্থিতি সংক্রান্ত Pratt-এর মতবাদটির সংক্ষিপু বর্ণনা দাও।

## Unit-II

(Tectonic Theories and Processes)
(d) উদাহরণ সহয়োগে অগ্যুৎপাতের সময়ের ব্যবধান অনুসারে বিভিন্ন ধরনের আগ্নেয়গিরির শ্রেণিবিভাগ করো।
(e) অধঃপাত মণ্ডল (Subduction zone) ও বেনিয়ফ জোন (Benioff zone)-এর মধ্যে পার্থক্য লেখো।
(f) অভিসারী পাত সীমানায় (Convergence Plate Boundary) মৃষ্ট ভূমিরূপগুলি আলোচনা করো।

## Unit-III

(Processes of Geomorphology)
(g) ভূমিরূপ বিবর্তনে পেঙ্ক (Penk)-এর মতবাদটি আলোচনা করো।
(h) সমপ্রায় ভূমি (Peneplain) কাকে বলে? সমপ্রায় ভূমি ও পেডিপ্লেনের পার্থক্য লেখো।
(i) ঢালের উপাদানগুলি আলোচনা করো। উত্তল ও অবতল ঢালের বৈশিষ্ট্যগুলি লেখো।

## Section-C

3. যেকোনো একটি প্রশ্নের উত্তর দাও:
(a) ভূমিকন্পের কারণ ও ফলাফল আলোচনা করো।
(b) সমনত বা একনত গঠনযুক্ত অঞ্চলে ভূমিরূপ ও নদী বিন্যাসের ক্রুমবিবর্তন আলোচনা করো।
(c) ওয়েগনারের মহাদেশীয় চলন তত্ত্বটি (Continental Drift theory) আলোচনা করো।

# B.Sc. 1st Semester (Honours) Examination, 2019-20 <br> GEOGRAPHY 

Course ID : 11911
Course Code : SH/GEO/101/C-1
Course Title: Geotectonics and Geomorphology
Time: 2 Hours
Full Marks: 40

The figures in the margin indicate full marks.
Candidates are required to give their answers in their own words as far as practicable.

দক্ষিণ প্রান্তস্থ সংখ্যগুলি প্রশ্নের পূর্রমানের নির্দেশক।
পরীক্ষার্থীদের যথাসম্ভব নিজের ভাযায় উত্তর দিতে হবে।

## Section-A

1. Answer any five questions in all, selecting at least one but not more than two from each unit:
$2 \times 5=10$
প্রতিটি একক থেকে কমপক্ষে একটি কিন্তু অনধিক দুটি প্রশ্নের উত্তরসহ মোট মাঁচটি প্রশ্নের উত্তর দাও।

## Unit-I

(Earth: Origin and Evolution)
(a) What are the characteristic features of Pleistocene era?

প্লেসটোসিন যুগের চারিত্রিক বৈশিষ্ট্যগুলি কী কী?
(b) Who propounded the 'Tidal Hypothesis regarding the Origin of Earth' and in which year?

পৃথিবীর উৎপত্তি সংক্রান্ত ‘জোয়ার-ভাঁটা তত্ত্বে’র প্রবক্তা কে এবং কোন সালে?
(c) What is meant by Global Isostatic Adjustment?

পৃথিবীব্যাপি সমস্থিতিক ভারসাম্য বলতে কী বোঝায়?

## Unit-II

(Tectonic Theories and Processes)
(d) Define Plate Margin.

পাত সীমান্তর সংজ্ঞা দাও।
(e) What is Hot Spot?

তপ্তবিন্দু কী?
(f) Define Panthalasa.

প্যান্থালাসার সংজ্ঞা দাও।

## Unit-III

(Process Geomorphology)
(g) What do you understand by 'Knick Point'?
‘নিক বিন্দু’ বলতে কী বোঝ ?
(h) What is fiord?

ফিয়র্ড কাকে বলে?
(i) What is Sand blasting?

বালুকা বিঙ্ফেরণ কী?

## Section-B

2. Answer any five questions taking at least one from each but not more than two from each unit:

$$
4 \times 5=20
$$

প্রতিটি একক (unit) থেকে কমপক্ষে একটি এবং অনধিক দুটি প্রশ্নের উত্তরসহ মোট পাঁচটি প্রশ্নের উত্তর দাও।

## Unit-I

(Earth: Origin and Evolution)
(a) Distinguish between the theories of Airy and Pratt on isostasy.

Airy ও Pratt-এর সমস্থিতি মতবাদের পার্থক্য দেখাও।
(b) Elucidate the characteristics of Quaternary period of Geological Time scale.

ভূ-তাত্ত্রিক সময় সারণীর কোয়ার্তারনারী যুগের বৈশিষ্ট্যগুলি তুলে ধর।
(c) Classify Earth's layers on the basis of chemical composition.

রাসায়নিক গঠনের সাপেক্ষে পৃথিবীর স্তরগুলির শ্রেণিবিভাগ করো।

## Unit-II

(Tectonic Theories and Processes)
(d) Explain the significance of continental Drift theory as postulated by Wagner.

ওয়াগনার প্রদত্ত মহীসঞ্চরণ মতবাদটির গুরুত্ব ব্যাখ্যা করো।
(e) Explain the significance of Palaeo-Magnetism for plate-movement study.

পাত সঞ্চারণে পুরা--ুম্বকীয় ত大্ত্বের গুরুত্ব ব্যাখ্যা করো।
(f) Describe the major landforms produced by Intrusive volcanicity.

উৎડেদী অগ্নুৎগহের ফনেে গঠিত প্রধান ভূমিরূপগুলি বর্ণনা করো।

## Unit-III

(Process Geomorphology)
(g) Explain the development of paired river terraces with suitable diagram.

উপযুক্ত চিত্রসহ যুগ্মনদীমঞ্চের গঠন ব্যাখ্যা করো।
(h) Explain the development of Glacio-fluvial landforms.

হিমবাহ জলধারা দ্বারা গঠিত ভূমিরূপের বিকাশ ব্যাখ্যা করো।
(i) Specify the stages of development of inversion of relief.

বৈপরীত্য ভূমিরূপ বিবর্তনের ধাপগুলি বর্ণনা করো।

## Section-C

$$
\begin{array}{ll}
\text { Answer any one question. } & 10 \times 1=10 \\
\text { বেকোনো একটি প্রশ্নের উত্তর দাও। } &
\end{array}
$$

3. Critically examine modern theories on origin of the earth.

পৃথিবীর উৎপত্তি সম্পর্কিত আধুনিক তত্ত্ণুলির মূল্যায়ন করো।
4. Elucidate the results of convergent plate movement with suitable example.

উদাহরণসহকরে অভিসারী পাত চলনের ফলাফফল ব্যাখ্যা করো।
5. Elaborate the concept of Davis in the evolution of landforms.

ভূমিরূপের বিবর্তন সম্পর্কিত ডেভিস-এর ধারণা ব্যাখ্যা করো।

