UNIVERSITY OF NORTH BENGAL

B.Sc. Honours 1st Semester Examination, 2022

CC1-GEOLOGY

EARTH SYSTEM SCIENCE

Time Allotted: 2 Hours   Full Marks: 40

The figures in the margin indicate full marks.

1. Answer any **five** of the following: 1×5 = 5
    (a) What is the most abundant element in the universe?
    (b) Which planet is retaining on a retrograde direction on its celestial plane?
    (c) Entropy — Explain the word.
    (d) What do you mean by absolute age of rocks?
    (e) What are body wave and surface wave of earthquakes?
    (f) What is Lahar?
    (g) What is dwarf planet?
    (h) What is Mohorovicic discontinuity?

2. Answer any **three** of the following: 5×3 = 15
    (a) How viscosity of magma affects eruption of volcanos — Explain with examples. Describe different types of unconformities.   3+2
    (b) Describe elastic rebound theory. Describe briefly the hypothesis of Airy on isostasy.   2+3
    (c) Write a short note on the different growth stage of oxygen in the atmosphere.
    (d) Sketch a diagram of the layered structure of the Earth's interior indicating major seismic discontinuities.   5
    (e) How do the climate and tectonic shape the landscape?   5

3. Answer any **two** of the following: 10×2 = 20
    (a) What is Bode's Law? How did this law help us to predict the position of Asteroid belt? Write down the Oddo-Harkin rules. Why there is a pronounced atomic peak found at atomic number 26?   2+3+2+3
    (b) Discuss any conventional theory of solar system formation with proper sketches. What is geochemical cycle? How does the material changes take place during various stages of geochemical cycle?   5+2+3
    (c) Describe the mechanism of igneous activity at different plate margins. "Precambrian organic carbon burial peaks correspond roughly two times of major collisional orogeny and supercontinent formation" — Justify the statement.   5+5
    (d) Differentiate glacio-eustasy and tectono-eustasy. "$^{87}Sr/^{86}Sr$ values increase with regression"— Explain. Why there was a great fall in sea level at Permo-Triassic boundary? What are the major reasons for declining of stromatolites after Cambrian?   2+2+4+2

——×——