

KATHMANDU UNIVERSITY
End Semester Examination
May/June, 2022

Marks scored:

Level : B.Sc.

Year : II

Exam Roll No. :

Time: 30 mins.

Course : ENVS 205

Semester : II

F.M. : 20

Registration No.:

Date : June-12, 2022

SECTION "A"

[20Q × 0.5 = 10 marks]

Mark [✓] in the most appropriate option.

1. Ripple marks are found in bedding plane of _____ water deposition.
[] shallow [] deep [] huge [] dirty
2. Energy is input from the Sun; energy is lost from the interior. The magnitude of these fluxes is _____.
[] equal [] greater [] not different [] not equal
3. _____ is a general idea of large scale continental displacement, first described by Frank B Taylor in 1908.
[] Plate tectonics [] Pangea
[] Mountain building [] Continental Drift
4. Most _____ are caused by the sudden slip along geologic faults.
[] Earthquakes [] Landslide [] Flood [] Volcanic eruptions
5. Batholith is a massive, discordant intrusive body covering at least _____.
[] 1000 Km² [] 500 Km² [] 1500 Km² [] 100 Km²
6. A measure of the variation in the range of grain sizes in a rock or sediment is _____.
[] Scouting [] Sorting [] Screening [] Shorting
7. Cracks in rocks along which there has been no appreciable displacement are _____.
[] Slides [] Shores [] Joints [] Glides
8. _____ are very large intrusive bodies, usually so large that their bottoms are rarely exposed.
[] Batholiths [] Dykes [] Mantles [] Crusts
9. It is a just relative motion between two fractured blocks.
[] Joint [] Fault [] Bedding plane [] Fold
10. In a sequence of undisturbed layered rocks, the oldest rocks are on the bottom as per _____
[] Principle of superposition [] Principle of superstation
[] Principle of superimpose [] Principle of superior

11. Action of coinciding and oppositely directed forces acting parallel to each other across a surface is _____.
 Shear Shore Share Slide
12. The study of landforms and surface processes is known as _____.
 Petrology Geomorphology Hydrology Sedimentologist
13. The process by which rocks of various compositions can arise from a uniform parent magma is _____.
 Volcanism Magma Differentiation
 Dyke formation Geysers
14. Braided channels occur when the sediments load is transported by a stream and is _____ than the carrying capacity of stream.
 lesser super greater minor
15. A weak, ductile layer of the mantle beneath the lithosphere; deforms to accommodate the motions of the overlying plates is _____.
 Asthenosphere Troposphere Ultrasphere Supersphere
16. Sediment (typically sand) transported by intermittent jumps - a transitional state between bedload and suspended load is called _____.
 Sedimentation Saltation Suspension Traction
17. The elevation at which a stream ends by entering a large standing body of water, such as a lake or ocean is _____.
 Best level Stream level Level base Base level
18. Intermediate in composition and viscosity between mafic and felsic magmas are _____.
 Andesitic lavas Basaltic lavas Rhyolitic lavas Ultra mafic lavas
19. Chemical precipitation of mineral material between grains (SiO_2 , CaCO_3 , Fe_2O_3) binds sediment into hard rock is known as _____.
 Schistosity Magnetism Foliation Cementation
20. The Himalayan range consists of the sediments of the _____ Sea and the Indian Shield, which was faulted and folded into the elevated young peaks.
 Indian Black Arabian Tethys

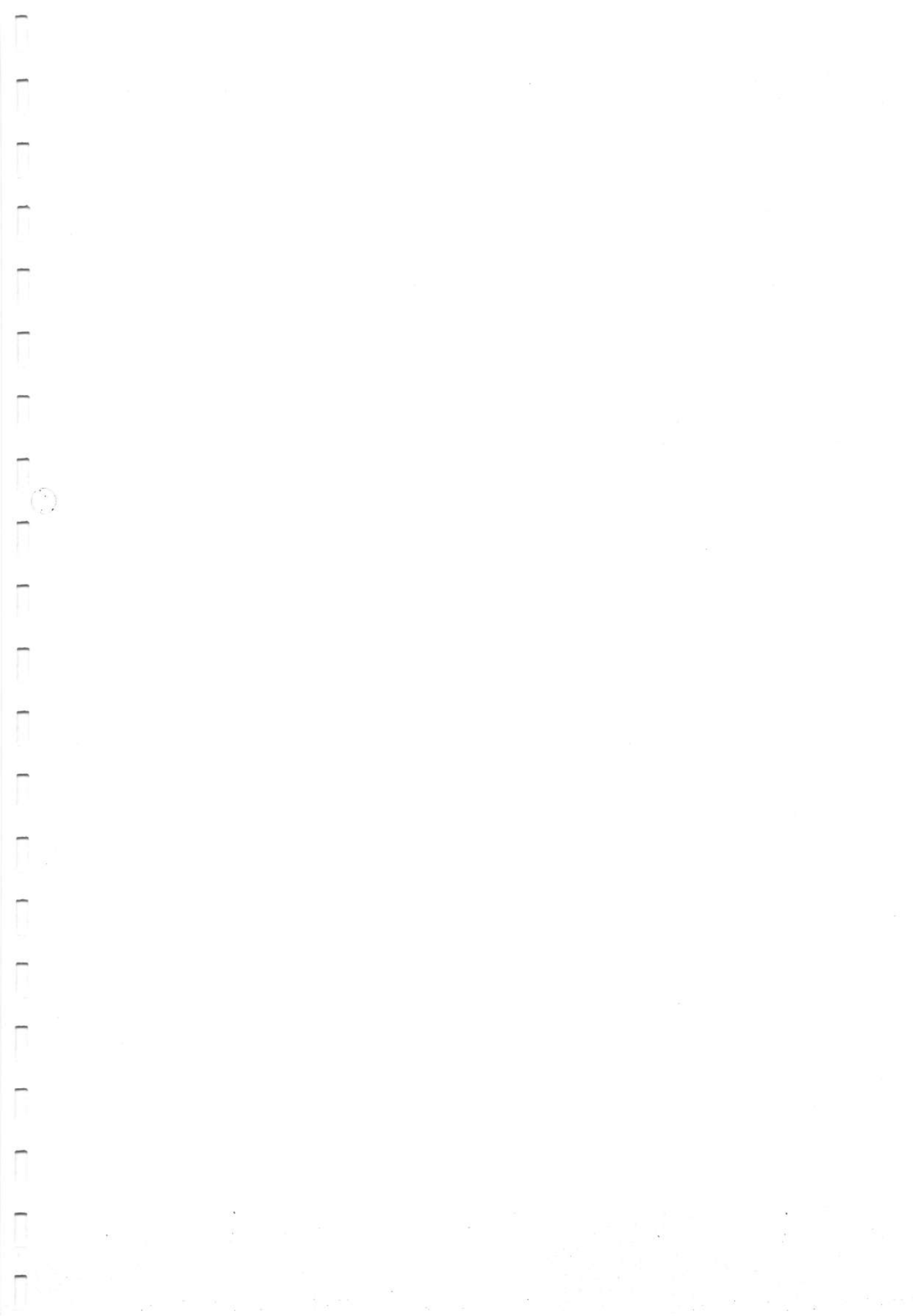
SECTION "B"

[20Q × 0.5 = 10 marks]

Write "T" for true and "F" for false in the statement.

21. "Earthquakes kill people, buildings don't kill people." []
22. Action of oppositely directed forces acting towards each other at the same time is compression. []

23. Antiform is a sequence of folded rocks in which the limbs form an arrow pointing down. []
24. Darcy's Law: $A = Q (K \times S)$ []
25. Igneous rock are the Rocks formed by the solidification of magma. []
26. In rotational slides the mass displaces along a planar or undulating surface of rupture, sliding out over the original ground surface." (Varnes, 1996) []
27. Lahars is formed by the sudden mixing of large volumes of pyroclastic material with water (e.g. heavy rain, draining of crater lake, melting of glacier). []
28. Lesser Himalaya Zone lies in between Main Boundary Thrust and Main Central Thrust. []
29. Metamorphic Grade: Refers to the intensity of metamorphism. []
30. Normal faults are caused by compressional stress. []
31. Paleontology is the study of life in the present based on the fossil of plants and animals. []
32. Regolith: is a layer of broken pieces of rock and slightly altered rock that overlies the bedrock. []
33. Sandstones are sedimentary rocks. []
34. Steno's law apply to both sedimentary and metamorphic rocks. []
35. Streak is shine of a mineral. Technically speaking, it is intensity of reflection of light form the mineral surface. []
36. Stress is any change in original shape or size of an object in response to stress acting on the object. []
37. Structural geology is the study of the formation of rocks and its effects. []
38. Sulfide is major component of limestone. []
39. The Pressure Surface is the level to which water will rise in wells in unconfined aquifers. []
40. The travel time of seismic wave independent upon the media through which it passing. []



KATHMANDU UNIVERSITY
End Semester Examination
May/June, 2022

Level : B.Sc.
Year : II
Time : 2 hrs. 30 mins.

Course : ENVS 205
Semester : II
F. M. : 55

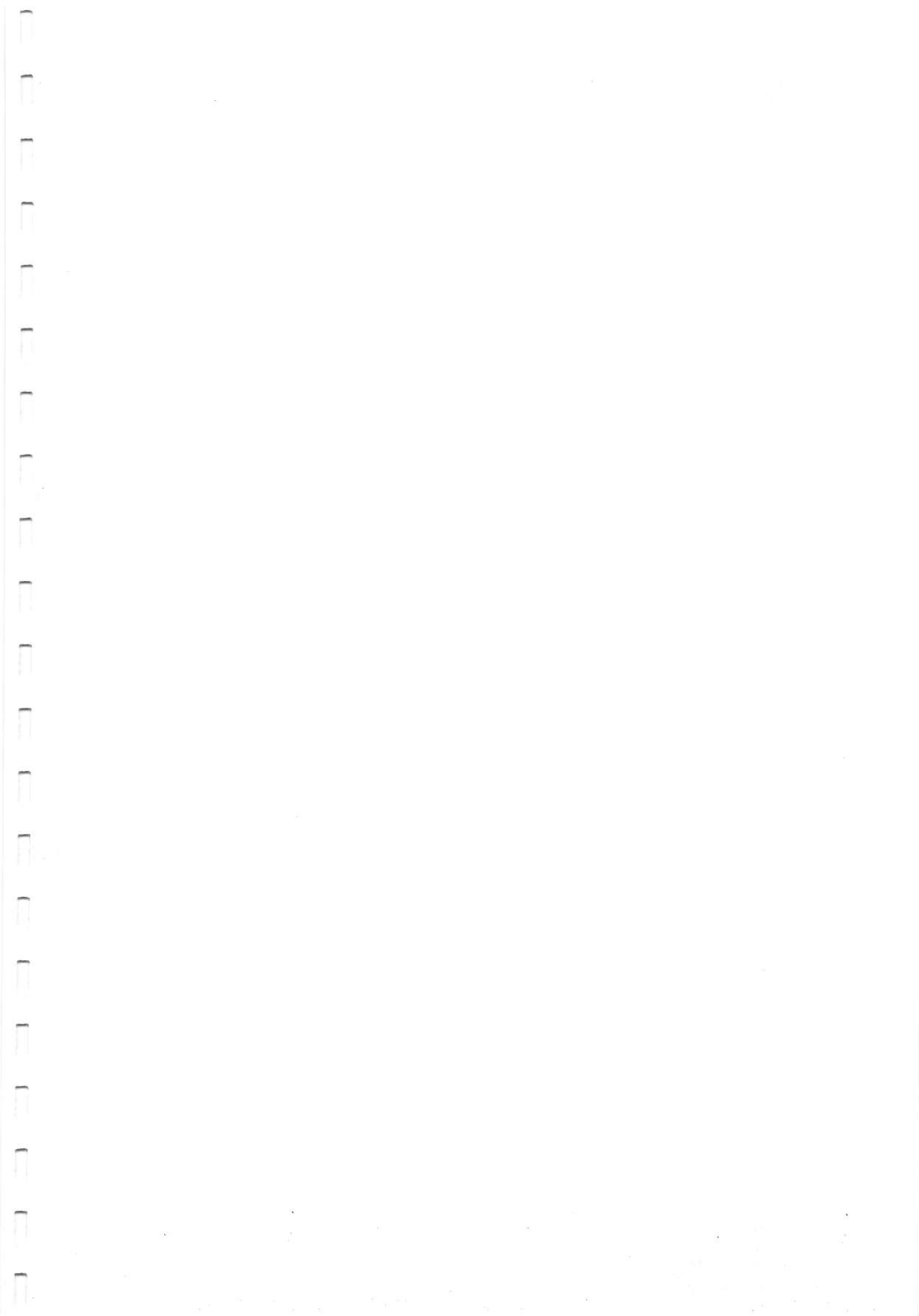
SECTION "C"
[3Q. × 7= 21 marks]

Answer *ANY THREE* questions.

1. What is landslide? How can we classify it? Discuss on mitigation measures.
2. What is an aquifer? Describe the different types of aquifer and their functions? Point-out the contamination sources for the aquifer.
3. What are major geological units and its characteristics of Nepal Himalaya? Describe briefly.
4. What is environmental geology? Why is it different from other sciences?

SECTION "D"
[34 marks]

5. Write note on (*ANY FOUR*): [4Q. × 4 = 16 marks]
 - a. Locating epicenter
 - b. Metamorphic Processes
 - c. Recharge Area
 - d. Types of Lavas
 - e. Siwalik
6. Differentiate between (*ANY FOUR*): [4Q. × 3 = 12 marks]
 - a. Lithosphere and Asthenosphere
 - b. MBT and MFT
 - c. P and S waves
 - d. Chemical weathering and Mechanical weathering
 - e. Meandering Streams and Braided Streams
7. Discuss in the following terms (*ANY THREE*): [3Q. × 2 = 6 marks]
 - a. Strike
 - b. Angle of Repose
 - c. Syncline
 - d. Blind Faults



KATHMANDU UNIVERSITY
End Semester Examination
May/June, 2022

Marks Scored:

Level : B.Pharm.

Year : II

Exam Roll No. :

Time: 30 mins.

Course : PHAR 224

Semester : II

F. M. : 20

Registration No.:

Date :

SECTION "A"

[20Q. × 1 = 20 marks]

Encircle the most appropriate answer.

- Which one of the following functional group is least susceptible to be metabolized by cytochrome p450?
a. Primary amine b. Secondary amine c. Tertiary amine d. Quaternary amine
- Which one of the following enzymes are **NOT** present in Phase II of drug metabolism?
a. Sulfotransferases b. Methyltransferase
c. Esterase d. Glutathione S-transferase
- Which one of the following enzymes is highly nonspecific in nature?
a. ACE b. Renin
c. Dopamine beta hydroxylase d. Tyrosine hydroxylase
- The drug that does not need enzyme for its metabolism is
a. Clonidine b. Atracurium c. Amlodipine d. Midodrine
- Which of the following statement is **TRUE**?
a. Low pKa value indicate the acidity of the compound.
b. Oral drugs with high logP values avoid first pass metabolism.
c. Lipinski's rule is a mandatory parameter to follow for oral drug.
d. Transition state analogues are stable to enzyme catalyzed reaction.
- Some solid compounds with higher logP can have good solubility because
a. It has low molecular weight. b. It has low melting point.
c. It has low pka value. d. All the statements above are wrong.
- Local anaesthetic drug that potentially cause allergic reaction is
a. Lignocaine b. Prilocaine c. Procaine d. Bupivacaine
- In spite of having highly basic guanidine functional group, clonidine can pass through BBB because,
a. The basic center is masked by converting to its prodrug.
b. Its basicity is reduced due to suitably placed two chlorine in the structure.
c. It has additional highly lipophilic functional group.
d. It is taken up by active transport system into the BBB.

9. One of the following is not structural requirement of Acetylcholine
 - a. Onium group
 - b. Ethylene bridge
 - c. Quaternary ammonium
 - d. Acetyl group
10. Which of the following one is **NOT** a prodrug?
 - a. Lisinopril
 - b. Methyldopa
 - c. Enalapril
 - d. Sulindac
11. The n-butyl group in losartan mimic theof Angiotensin II
 - a. Tyrosine
 - b. Aspartic acid
 - c. Isoleucine
 - d. Histidine
12. Amlodipine is primarily metabolized through
 - a. Hydrolysis of ester bond at C3
 - b. Hydrolysis of ester bond at C5
 - c. Oxidation of dihydropyridine
 - d. Epoxide formation of aromatic ring
13. Which isomer of Labetolol does not have α and β blocking effect?
 - a. R.R
 - b. S.S
 - c. S.R
 - d. R.S
14. Aging effect is a
 - a. Natural degradation of cholinesterase enzyme
 - b. Formation of less electrophilic group
 - c. Formation of less nucleophilic group
 - d. Formation of weakly bonded phosphorylated group so that can easily be regenerated
15. The strongest bond strength among the options provided is
 - a. Dipole dipole bond
 - b. Charge dipole bond
 - c. Ionic bond
 - d. Hydrogen bond
16. Guanethidine does not have CNS activity as it possess one of the following polar group
 - a. Carboxyl group
 - b. Amine group
 - c. Guanidine group
 - d. It has potent CNS activity, which as restricted its clinical use.
17. The oxidation of alkene usually results in
 - a. Diols
 - b. Ketone
 - c. Aldehyde
 - d. Carboxylic acid
18. Which drug given below does have its solubility enhanced by Esterification?
 - a. Fosinoprilat
 - b. Methyldopate
 - c. Dipivefrin
 - d. Captopril
19. Influence of Bulkiness in the nitrogen substituents in the affinity towards alfa receptor is in the order of
 - a. isoproterenol, epinephrine and nor epinephrine
 - b. epinephrine, isoproterenol nor epinephrine
 - c. nor epinephrine, epinephrine, isoproterenol
 - d. They have equal affinity
20. Which one of the following antihypertensive drugs do has imidazoline ring?
 - a. Clonidine
 - b. Methyldopa
 - c. Dobutamine
 - d. Prazosin