

DU MSc Geology

Topic:- GEO MSC

1) Granulometric analysis of a sand sample reveals well-sorted, negatively skewed character. The sample may be from a[Question ID = 6522]

1. Desert [Option ID = 26085]
2. River [Option ID = 26086]
3. Beach [Option ID = 26087]
4. Deep marine sediment [Option ID = 26088]

2) Which of the following statements is correct?

[Question ID = 6523]

1. In riftogenic sandstones potassium (K)
[Option ID = 26089]
2. In greywacke sandstones sodium (Na) > potassium (K)
[Option ID = 26090]
3. In arkosic sandstones sodium (Na) > potassium (K)
[Option ID = 26091]
4. In greywacke sandstones sodium (Na) < potassium (K)
[Option ID = 26092]

3) In a sandstone-shale heterolithic sequence, sandstone units are of sharp base and top, contains tool and prod marks at their bases and internally constituted of concavo-convex laminae having centripetal dip. The sandstone beds are interpreted as products of[Question ID = 6524]

1. Tidal current [Option ID = 26093]
2. Turbidity current [Option ID = 26094]
3. Riverine flow [Option ID = 26095]
4. Storm [Option ID = 26096]

4) A sediment unit deposited from suspension is likely to show the following character in granulometric analysis.[Question ID = 6525]

1. Positive skewness and poor sorting [Option ID = 26097]
2. Negative skewness and poor sorting [Option ID = 26098]
3. Positive skewness and good sorting [Option ID = 26099]
4. Negative skewness and good sorting [Option ID = 26100]

5) _____ are intrabed soft sediment deformation features.[Question ID = 6526]

1. Convolute lamination and overturned cross-stratification [Option ID = 26101]
2. Load cast and convolute lamination [Option ID = 26102]
3. Flame structure and overturned cross-stratification [Option ID = 26103]
4. Load cast and flame structure [Option ID = 26104]

6) Seismic velocity through the Earth reaches highest velocity at[Question ID = 6527]

1. The Crust-Mantle boundary [Option ID = 26105]
2. The Mantle-Core boundary [Option ID = 26106]
3. The Conrad discontinuity [Option ID = 26107]
4. The 'D' layer [Option ID = 26108]

7) The Umria marine bed overlies the _____ formation and is _____ in age.[Question ID = 6528]

1. Barakar, Lower Triassic [Option ID = 26109]
2. Talchir, Lower Permian [Option ID = 26110]
3. Raniganj, Upper Triassic [Option ID = 26111]
4. Karharbari, Lower Permian [Option ID = 26112]

8) The regional fault that brought Upper Vindhya in contact with highly folded and foliated schists of Aravalli is referred to as[Question ID = 6529]

1. The Son-Narmada Fault [Option ID = 26113]
2. The Main Boundary Fault [Option ID = 26114]
3. The Great Boundary Fault [Option ID = 26115]
4. The Kutch-Kathiawar Fault [Option ID = 26116]

9) A clast-supported conglomerate with lenticular geometry and a(t) b(i) clast imbrications is likely to be a product of[Question ID = 6530]

1. Debris flow [Option ID = 26117]
2. Sieve deposition [Option ID = 26118]
3. Channel thalweg deposition [Option ID = 26119]

4. Turbidity current [Option ID = 26120]

10) If ‘P’ represents the seismic P-wave, ‘S’ represents the seismic Shear wave and ‘L’ represents the seismic Love wave, then disaster sequence of seismic waves will be

[Question ID = 6531]

1. P>S>L

[Option ID = 26121]

2. L>P>S

[Option ID = 26122]

3. P>L>S

[Option ID = 26123]

4. P

[Option ID = 26124]

11) Coral reefs are generally found in the latitudinal extensions[Question ID = 6532]

1. 20° N - 20° S [Option ID = 26125]

2. 30°N - 30° S [Option ID = 26126]

3. 45° N - 45°S [Option ID = 26127]

4. 60°N - 60°S [Option ID = 26128]

12) Which of the following is a fundamental lithostratigraphic unit?[Question ID = 6533]

1. Supergroup [Option ID = 26129]

2. Group [Option ID = 26130]

3. Formation [Option ID = 26131]

4. Member [Option ID = 26132]

13) A grain is settling through a column of water. If the radius of the grain ‘R’ is smaller than 0.1mm, the relationship between grain settling velocity (V) and grain radius (R) will be[Question ID = 6534]

1. $V = \sqrt{R}$ [Option ID = 26133]

2. $V = R^2$ [Option ID = 26134]

3. $\log V = 2 \log R + C$ [Option ID = 26135]

4. $\log V = \frac{1}{2} \log R + C$ [Option ID = 26136]

14) Petromict conglomerates are[Question ID = 6535]

1. Conglomerates with Single type of clasts [Option ID = 26137]

2. Conglomerates with a mixture of largely unstable and metastable clasts including basalt, lst., shale, phyllite etc. [Option ID = 26138]

3. Conglomerates with a mixture of largely stable clasts including quartzite, vein quartz etc. [Option ID = 26139]

4. Unconformity-related [Option ID = 26140]

15) Sandy coastline with an extensive area of beach directly adjacent to the coastal plain is termed as

[Question ID = 6536]

1. Shoreface

[Option ID = 26141]

2. Chenier

[Option ID = 26142]

3. Foreshore

[Option ID = 26143]

4. Strand plain

[Option ID = 26144]

16) A unfossiliferous sandstone succession overlies ~1870 Ma old granite basement. A diabase dyke of 750 Ma age cuts across the granite and abuts against the granite-sandstone contact. A geologist would[Question ID = 6537]

1. Interpret the age of sandstone older than 1870 Ma [Option ID = 26145]

2. Interpret the age of sandstone older than 750 Ma but younger than 1870 Ma [Option ID = 26146]

3. Interpret the age of sandstone younger than 750 Ma [Option ID = 26147]

4. Not attempt any interpretation regarding age of the sandstone [Option ID = 26148]

17) Match List I with List II

List I	List II
A. Current Crescent	I. Intrabed Structure
B. Convolute lamination	II. Interbed Structure
C. Flute Mark	III. Bedding Plane Structure
D. Load Mark	IV. Sole Structure

Choose the correct answer from the options given below:

[Question ID = 6538]

1. A - II, B - I, C - IV, D - III [Option ID = 26149]

2. A - I, B - II, C - IV, D - III [Option ID = 26150]

3. A - III , B - I , C - IV , D - II [Option ID = 26151]
4. A - III , B - II , C - I , D - IV [Option ID = 26152]

18) The time-rock unit 'stage' corresponds with _____ of the time unit.[Question ID = 6539]

1. Epoch [Option ID = 26153]
2. Age [Option ID = 26154]
3. Chron [Option ID = 26155]
4. Era [Option ID = 26156]

19) In terms of decreasing flow energy, arrange the following

A. flute mark

B. planar-tabular cross-stratification

C. parting lineation

D. planar-curved cross-stratification

[Question ID = 6540]

1. A, B, C, D
[Option ID = 26157]
2. A, C, B, D
[Option ID = 26158]
3. D, C, B, A
[Option ID = 26159]
4. A, D, C, B
[Option ID = 26160]

20) Palghat-Cauvery shear zone[Question ID = 6541]

1. Demarcates the boundary between the eastern and western Dharwar craton [Option ID = 26161]
2. Dissects the southern granulite terrane [Option ID = 26162]
3. Marks the boundary of Eastern Ghat Mobile Belt [Option ID = 26163]
4. Is an extension of Singbhum shear zone [Option ID = 26164]

21) The correct sequence in terms of decreasing geologic age is:[Question ID = 6542]

1. Dalma trap > Bijli rhyolites > Sitagota volcanics > Malani volcanics [Option ID = 26165]
2. Sitagota volcanics > Bijli rhyolites > Dalma trap > Malani volcanics [Option ID = 26166]
3. Dalma trap > Sitagota volcanics > Bijli rhyolite > Malani volcanics [Option ID = 26167]
4. Bijli rhyolite > Dalma trap > Malani volcanics > Sitagota volcanics [Option ID = 26168]

22) One can expect precipitation of _____ as dominant carbonate mineralogy from saturated sea water when CO₂ pressure in atmosphere becomes high.[Question ID = 6543]

1. Low-Mg calcite and aragonite [Option ID = 26169]
2. High-Mg calcite [Option ID = 26170]
3. High-Mg calcite and aragonite [Option ID = 26171]
4. High-Mg calcite and dolomite [Option ID = 26172]

23) A poorly-sorted trough cross-stratified granular sandstone with occasional interbeds of lenticular conglomerate having sub-rounded to rounded clasts is likely to be interpreted as a product of[Question ID = 6544]

1. Beach environment [Option ID = 26173]
2. Eolian environment [Option ID = 26174]
3. Alluvial environment [Option ID = 26175]
4. Tidal environment [Option ID = 26176]

24) Meniscus and Pendant cement are products of[Question ID = 6545]

1. Deep burial diagenesis [Option ID = 26177]
2. Sea floor diagenesis [Option ID = 26178]
3. Vadose diagenesis [Option ID = 26179]
4. Phreatic diagenesis [Option ID = 26180]

25) Syn-sedimentary deformation structures may be a result of[Question ID = 6546]

1. Low sedimentation [Option ID = 26181]
2. High sedimentation [Option ID = 26182]
3. Marine transgression [Option ID = 26183]
4. Marine regression [Option ID = 26184]

26) By the term 'Boundary layer' in a fluid flow, we refer to[Question ID = 6547]

1. A portion of a flow within which a velocity gradient develops due to friction within the bed [Option ID = 26185]
2. The boundary of a flow [Option ID = 26186]
3. The layers which bound a flow, may be air or solid surface [Option ID = 26187]
4. A portion of a flow within which velocity increases downward towards the underlying bed [Option ID = 26188]

27) When μ is viscosity and ρ is density of a fluid, the Kinematic viscosity of the fluid will be defined by[Question ID = 6548]

1. $\mu \times \rho$ [Option ID = 26189]
2. $\mu^2 \times \rho$ [Option ID = 26190]
3. $\mu \cdot \rho$ [Option ID = 26191]
4. μ / ρ [Option ID = 26192]

28) The following mineral is a potassium and iron-rich phyllosilicate[Question ID = 6549]

1. Muscovite [Option ID = 26193]
2. Biotite [Option ID = 26194]
3. Glauconite [Option ID = 26195]
4. Kaolinite [Option ID = 26196]

29) Aquifer anisotropy relates to[Question ID = 6550]

1. Temporal variation in aquifer parameters [Option ID = 26197]
2. Both spatial and temporal variation in aquifer parameters [Option ID = 26198]
3. Directional variation in aquifer parameters [Option ID = 26199]
4. Spatial variation in aquifer parameters [Option ID = 26200]

30) If the pole of a planar structure plots at the center of the Schmidt stereonet, the plane is[Question ID = 6551]

1. Vertical [Option ID = 26201]
2. Horizontal [Option ID = 26202]
3. Shallow dipping [Option ID = 26203]
4. Steep dipping [Option ID = 26204]

31) In one limb of a map-scale fold, the cleavage (axial planar) dips at a shallower angle than the bedding. The fold is: [Question ID = 6552]

1. An upright fold [Option ID = 26205]
2. A recumbent fold [Option ID = 26206]
3. An overturned fold [Option ID = 26207]
4. A cylindrical fold [Option ID = 26208]

32) Theim's equation for steady state radial flow to a tubewell in confined aquifer can be used to estimate[Question ID = 6553]

1. Transmissivity only [Option ID = 26209]
2. Storativity only [Option ID = 26210]
3. Specific yield only [Option ID = 26211]
4. Both Transmissivity and Storativity [Option ID = 26212]

33) Grouting has proved effective in[Question ID = 6554]

1. Pumping Test [Option ID = 26213]
2. Aquifer Performance Test [Option ID = 26214]
3. Reducing percolation of water through dam foundations [Option ID = 26215]
4. Well Performance Test [Option ID = 26216]

34) The axial plane of a fold strikes N-S and dips 15° easterly. The fold axis plunges about 15° towards N89 $^\circ$ E. The fold can be classified as[Question ID = 6555]

1. An upright fold [Option ID = 26217]
2. A neutral fold [Option ID = 26218]
3. A recumbent fold [Option ID = 26219]
4. A reclined fold [Option ID = 26220]

35) Hydraulic conductivity is[Question ID = 6556]

1. Specific capacity [Option ID = 26221]
2. Transmissivity divided by the saturated aquifer thickness [Option ID = 26222]
3. Storativity multiplied by the aquifer thickness [Option ID = 26223]
4. Extension of the aquifer [Option ID = 26224]

36) An unconformity separating the younger sedimentary rock from the underlying older plutonic igneous rocks, is known as[Question ID = 6557]

1. Para-conformity [Option ID = 26225]
2. Angular unconformity [Option ID = 26226]
3. Non-conformity [Option ID = 26227]
4. Disconformity [Option ID = 26228]

37) Measures to control rockfall include[Question ID = 6558]

1. Trenches [Option ID = 26229]
2. Wire mesh and rock traps [Option ID = 26230]
3. Check dams [Option ID = 26231]
4. Contour farming [Option ID = 26232]

38) Slickenside striations on a fault plane have a pitch of 25° . The fault is[Question ID = 6559]

1. A strike-slip fault [Option ID = 26233]

2. A dip-slip fault [Option ID = 26234]
3. An oblique-slip fault [Option ID = 26235]
4. A transform fault [Option ID = 26236]

39) The major ions considered for hydrochemical facies analysis using trilinear plot are[Question ID = 6560]

1. Sodium, Potassium, Phosphorus, Magnesium, Chloride, Sulphate, Carbonate and Nitrate [Option ID = 26237]
2. Sodium, Potassium, Calcium, Magnesium, Chloride, Sulphate, Carbonate and Bicarbonate [Option ID = 26238]
3. Arsenic, Potassium, Calcium, Lead, Fluoride, Sulphate, Carbonate and Bicarbonate [Option ID = 26239]
4. Zinc, Mercury, Calcium, Magnesium, Aluminium , Sulphate, Carbonate and Bicarbonate [Option ID = 26240]

40) ‘Klippe’ and ‘Tectonic Window’ are terms related to[Question ID = 6561]

1. Plate subduction zone [Option ID = 26241]
2. Overthrust sheets [Option ID = 26242]
3. Diapiric intrusions [Option ID = 26243]
4. Salt domes [Option ID = 26244]

41) Total Dissolved Solids in the groundwater can also be estimated by measuring:

A. Electrical conductivity

B. Hydraulic conductivity

[Question ID = 6562]

1. A alone
[Option ID = 26245]
2. B alone
[Option ID = 26246]
3. Both A and B
[Option ID = 26247]
4. Neither A nor B
[Option ID = 26248]

42) The primary support for a tunnel in rock masses excavated by drilling and blasting may be provided by:

A. rock bolts, shotcrete or steel arches

B. contour ploughing

[Question ID = 6563]

1. A alone
[Option ID = 26249]
2. B alone
[Option ID = 26250]
3. Both A and B
[Option ID = 26251]
4. Neither A nor B
[Option ID = 26252]

43) Hydraulic conductivity is a function of:

A. Medium

B. Fluid

[Question ID = 6564]

1. A alone
[Option ID = 26253]
2. B alone
[Option ID = 26254]
3. Both A and B
[Option ID = 26255]
4. Neither A nor B
[Option ID = 26256]

44) Darcy’s law applies to :

A. Laminar flow in a saturated porous media

B. Turbulent flow

[Question ID = 6565]

1. A alone
[Option ID = 26257]

2. B alone

[Option ID = 26258]

3. Both A and B

[Option ID = 26259]

4. Neither A nor B

[Option ID = 26260]

45) Given below are two statements, one is labelled as Assertion A and the other is labelled as Reason R

Assertion A: Porosity of a formation is approximately equal to sum of Specific retention and Specific yield.

Reason R: The sum of Specific retention and Specific yield gives a ratio of the volume of total interconnected voids to the total volume of the rock or formation.

In light of the above statements, choose the *most appropriate* answer from the options given below

[Question ID = 6566]

1. Both A and R are correct and R is the correct explanation of A

[Option ID = 26261]

2. Both A and R are correct but R is NOT the correct explanation of A

[Option ID = 26262]

3. A is correct but R is not correct

[Option ID = 26263]

4. A is not correct but R is correct

[Option ID = 26264]

46) Given below are two statements, one is labelled as Assertion A and the other is labelled as Reason R

Assertion A: The high hydraulic gradient in earth dams accelerates erosive action where sediments are removed by seepage forces, hence forming subsurface cavities and tunnels.

Reason R: Such subsurface cavities and tunnels in an earth dam is generally observed in loose material with less cohesion.

In light of the above statements, choose the *most appropriate* answer from the options given below

[Question ID = 6567]

1. Both A and R are correct and R is the correct explanation of A

[Option ID = 26265]

2. Both A and R are correct but R is NOT the correct explanation of A

[Option ID = 26266]

3. A is correct but R is not correct

[Option ID = 26267]

4. A is not correct but R is correct

[Option ID = 26268]

47) Given below are two statements, one is labelled as Assertion A and the other is labelled as Reason R

Assertion A: The compressive strength of a sandstone is not influenced by its porosity.

Reason R: The porosity of a rock can be defined as the percentage pore space within a given volume.

In light of the above statements, choose the *most appropriate* answer from the options given below

[Question ID = 6568]

1. Both A and R are correct and R is the correct explanation of A

[Option ID = 26269]

2. Both A and R are correct but R is NOT the correct explanation of A

[Option ID = 26270]

3. A is correct but R is not correct

[Option ID = 26271]

4. A is not correct but R is correct

[Option ID = 26272]

48) Given below are two statements, one is labelled as Assertion A and the other is labelled as Reason R

Assertion A: During resistivity sounding in groundwater exploration, the electrode spacing is gradually increased.

Reason R: With the increase in electrode spacing, the deeper penetration of the electric field occurs, which helps in assessing the vertical variation of the resistivity.

In light of the above statements, choose the *most appropriate* answer from the options given below

[Question ID = 6569]

1. Both A and R are correct and R is the correct explanation of A

[Option ID = 26273]

2. Both A and R are correct but R is NOT the correct explanation of A

[Option ID = 26274]

3. A is correct but R is not correct

[Option ID = 26275]

4. A is not correct but R is correct

[Option ID = 26276]

49) Given below are two statements, one is labelled as Assertion A and the other is labelled as Reason R

Assertion A: Landslides generally refer to the rapid downward and outward movement of slope-forming materials by falling, sliding or flowing, or by some combination of these factors.

Reason R: The reason for landslide is that the forces creating movement, the disturbing forces exceed those resisting them, the resisting forces.

In light of the above statements, choose the *most appropriate* answer from the options given below

[Question ID = 6570]

1. Both A and R are correct and R is the correct explanation of A

[Option ID = 26277]

2. Both A and R are correct but R is NOT the correct explanation of A

[Option ID = 26278]

3. A is correct but R is not correct

[Option ID = 26279]

4. A is not correct but R is correct

[Option ID = 26280]

50) Given below are two statements, one is labelled as Assertion A and the other is labelled as Reason R

Assertion A: Suitability of groundwater for irrigation uses is commonly studied by measuring Sodium Adsorption Ratio.

Reason R: Sodium reacts with soil to reduce its permeability.

In light of the above statements, choose the *most appropriate* answer from the options given below

[Question ID = 6571]

1. Both A and R are correct and R is the correct explanation of A

[Option ID = 26281]

2. Both A and R are correct but R is NOT the correct explanation of A

[Option ID = 26282]

3. A is correct but R is not correct

[Option ID = 26283]

4. A is not correct but R is correct

[Option ID = 26284]

51) Match List I with List II

List I	List II
Aquifer Parameters	Units
A. Hydraulic conductivity	I. m^3/day
B. Transmissivity	II. m^{-1}
C. Specific storage	III. m/day
D. Discharge	IV. m^2/day

Choose the correct answer from the options given below:

[Question ID = 6572]

1. A-I, B-III, C-II, D-IV

[Option ID = 26285]

2. A-III, B-IV, C-II, D-I

[Option ID = 26286]

3. A-II, B-IV, C-II, D-I

[Option ID = 26287]

4. A-III, B-IV, C-I, D-II

[Option ID = 26288]

52) Match List I with List II

List I	List II
Types of structures	Types of structure/their process of construction
A. Shaft	I. Driven either vertically or at steep angle upwards
B. Raise	II. Driven vertically downwards
C. Concrete dam	III. Rockfill dams
D. Earth dam	IV. Arch dams

Choose the correct answer from the options given below:

[Question ID = 6573]

1. A-II, B-I, C-IV, D-III [Option ID = 26289]
2. A-II, B-IV, C-III, D-I [Option ID = 26290]
3. A-II, B-I, C-III, D-IV [Option ID = 26291]
4. A-III, B-IV, C-I, D-II [Option ID = 26292]

53) Match List I with List II

List I	List II
Structures/spatial orientation/processes	Structures/spatial orientation/rocks/process linked environment
A. Foliation	I. Cleavage
B. Mylonitization	II. Plunge
C. Trend	III. Fault rock
D. Gouge and breccia	IV. High strain environment

Choose the correct answer from the options given below:

[Question ID = 6574]

1. A-I, B-II, C-III, D-IV [Option ID = 26293]
2. A-II, B-IV, C-III, D-I [Option ID = 26294]
3. A-III, B-II, C-I, D-IV [Option ID = 26295]
4. A-I, B-IV, C-II, D-III [Option ID = 26296]

54) Spaced cleavage is typically associated with:

- A. An array of parallel to anastomosing, irregular to smooth, fracture-like partings that typically are occupied by clayey and carbonaceous matter.
- B. Very fine-grained (0.5 mm) pelitic (shaley) rocks metamorphosed to low grade.

[Question ID = 6575]

1. A alone
[Option ID = 26297]
2. B alone
[Option ID = 26298]
3. Both A and B
[Option ID = 26299]
4. Neither A nor B
[Option ID = 26300]

55) Z- shaped kink folds are called as :

- A. Dextral Kinks
- B. Sinistral Kinks

[Question ID = 6576]

1. A alone
[Option ID = 26301]
2. B alone
[Option ID = 26302]
3. Both A and B
[Option ID = 26303]
4. Neither A nor B
[Option ID = 26304]

56) Strike slip faults are caused due to the horizontal slip between the adjacent blocks. Depending on the sense of actual relative movement they can be described as:

- A. Reverse or thrust
- B. Left handed or right handed

[Question ID = 6577]

1. A alone
[Option ID = 26305]
2. B alone
[Option ID = 26306]
3. Both A and B
[Option ID = 26307]
4. Neither A nor B
[Option ID = 26308]

57) In general the rate of soil production _____ with increase in depth of soil.[Question ID = 6578]

1. increases [Option ID = 26309]
2. decreases [Option ID = 26310]
3. remains constant [Option ID = 26311]
4. may increase or decrease [Option ID = 26312]

58) _____ dating relies on releasing energy stored in mineral crystal lattices.[Question ID = 6579]

1. Radio Carbon [Option ID = 26313]
2. U/Th [Option ID = 26314]
3. Tree ring [Option ID = 26315]
4. Luminescence [Option ID = 26316]

59) Match List I with List II

List I	List II
Landforms	Process
A. Kame	I. Aeolian
B. Chute	II. Glacial
C. Ventifact	III. Fluvial

Choose the correct answer from the options given below:

[Question ID = 6580]

1. A - I, B - II, C - III [Option ID = 26317]
2. A - II, B - III, C - I [Option ID = 26318]
3. A - III, B - I, C - II [Option ID = 26319]
4. A - I, B - III, C - II [Option ID = 26320]

60) From the list given below, identify the glacial landforms:

A - Yardang

B - Erratic

C - Drumlin

D - Pediment

E - Nunataks

[Question ID = 6581]

1. A, D, E only
[Option ID = 26321]
2. B, D, E only
[Option ID = 26322]
3. A, C, D only
[Option ID = 26323]
4. B, C, E only
[Option ID = 26324]

61) In deep water, waves cause little sediment transport because[Question ID = 6582]

1. the water depth is less than the wave base and touches the ocean floor. [Option ID = 26325]
2. the water depth exceeds the wave base and do not touch the ocean floor. [Option ID = 26326]
3. the water depth exceeds the wave base and touches the ocean floor. [Option ID = 26327]
4. the water depth is less than the wave base and do not touch the ocean floor. [Option ID = 26328]

62) Mark the odd one out from the following landforms.[Question ID = 6583]

1. Berm [Option ID = 26329]
2. Arch [Option ID = 26330]
3. Spit [Option ID = 26331]
4. Tarn [Option ID = 26332]

63) Which of the following is not an impelling force in a channel?[Question ID = 6584]

1. Bed bank roughness [Option ID = 26333]

2. Mean boundary shear stress [Option ID = 26334]
3. Specific stream power [Option ID = 26335]
4. Critical stream power [Option ID = 26336]

64) Which of the following statements is/are NOT correct?

- A. A river may respond instantaneously as breaching of intrinsic and extrinsic threshold conditions prompts the transitions to a new state.**
- B. No response may be detected when river systems absorb the impacts of disturbance.**
- C. Rivers may respond rapidly at first after disruption, but in a uniform direction thereafter such that change occurs gradually over a long period.**
- D. Off-site impacts of major disturbances may induce a lagged response in downstream reaches.**

Choose the *correct* answer from the options given below:

[Question ID = 6585]

1. A and C only
[Option ID = 26337]
2. B only
[Option ID = 26338]
3. D only
[Option ID = 26339]
4. All the statements are correct
[Option ID = 26340]

65) Which of the following rock is most resistant to both chemical and mechanical weathering?[Question ID = 6586]

1. Limestone [Option ID = 26341]
2. Sandstone [Option ID = 26342]
3. Phyllite [Option ID = 26343]
4. Quartzite [Option ID = 26344]

66) Last glacial maxima ended about how many years ago?[Question ID = 6587]

1. 10,000 - 20,000 yrs ago [Option ID = 26345]
2. 2,000 - 4,000 yrs ago [Option ID = 26346]
3. 1,00,000 - 1,20,000 yrs ago [Option ID = 26347]
4. 60,000 - 80,000 yrs ago [Option ID = 26348]

67) From oldest to youngest, the correct sequences of periods is[Question ID = 6588]

1. Permian, Jurassic, Triassic, Cretaceous [Option ID = 26349]
2. Permian, Triassic, Jurassic, Cretaceous [Option ID = 26350]
3. Permian, Triassic, Cretaceous, Jurassic [Option ID = 26351]
4. Triassic, Permian, Jurassic, Cretaceous [Option ID = 26352]

68) Mountains have roots made of continental rock, extending deep into the malleable asthenosphere below. When the mountain begins to be worn down by erosion,[Question ID = 6589]

1. the orogen will rise as a result of isostatic adjustment. [Option ID = 26353]
2. mean elevation of the mountains will rise. [Option ID = 26354]
3. maximum elevation of the mountains will decrease. [Option ID = 26355]
4. the orogen will diminish as a result of isostatic adjustment. [Option ID = 26356]

69) Maximum separation between vegetation, soil and water is observed in _____ band.[Question ID = 6590]

1. Red [Option ID = 26357]
2. Green [Option ID = 26358]
3. Blue [Option ID = 26359]
4. Near Infra Red [Option ID = 26360]

70) Which of the following is used in remote sensing process?[Question ID = 6591]

1. Gamma-rays [Option ID = 26361]
2. Sonar waves [Option ID = 26362]
3. Electro-magnetic waves [Option ID = 26363]
4. X-rays [Option ID = 26364]

71) A geostationary satellites is placed at an altitude of approximately _____.[Question ID = 6592]

1. 16,000 km [Option ID = 26365]
2. 26,000 km [Option ID = 26366]
3. 36,000 km [Option ID = 26367]
4. 46,000 km [Option ID = 26368]

72) Which type of signals are generated by the satellites?[Question ID = 6593]

1. Sonar waves [Option ID = 26369]
2. Radar waves [Option ID = 26370]

3. Visible rays [Option ID = 26371]
4. Gamma-rays [Option ID = 26372]

73) What does spatial data mean?[Question ID = 6594]

1. Graphic values [Option ID = 26373]
2. Decimal values [Option ID = 26374]
3. Complex values [Option ID = 26375]
4. Positional values [Option ID = 26376]

74) What does metadata mean?[Question ID = 6595]

1. It is data of a location. [Option ID = 26377]
2. It is data of altitude. [Option ID = 26378]
3. It is data about data. [Option ID = 26379]
4. It is meteorological data. [Option ID = 26380]

75) According to Stefan-Boltzmann law, the total radiant existence from the surface of a material (M) is equal to _____. (σ - Stefan-Boltzmann constant; T - absolute temperature of the emitting material)

[Question ID = 6596]

1. $\sigma \times T^4$
[Option ID = 26381]
2. σ / T^4
[Option ID = 26382]
3. $\sigma + T^4$
[Option ID = 26383]
4. $\sigma - T^4$
[Option ID = 26384]

76) The ability to discriminate between very slight energy differences is known as[Question ID = 6597]

1. spatial resolution [Option ID = 26385]
2. temporal resolution [Option ID = 26386]
3. radiometric resolution [Option ID = 26387]
4. ordinary resolution [Option ID = 26388]

77) Which is the last mineral to crystallize in Bowen reaction series?[Question ID = 6598]

1. K-Feldspar [Option ID = 26389]
2. Muscovite [Option ID = 26390]
3. Olivine [Option ID = 26391]
4. Quartz [Option ID = 26392]

78) In comparison to pole, the magnetic field at the equator is _____.[Question ID = 6599]

1. double [Option ID = 26393]
2. half [Option ID = 26394]
3. thrice [Option ID = 26395]
4. one-fourth [Option ID = 26396]

79) Alumunium oxide is insoluble in[Question ID = 6600]

1. strongly acidic solutions [Option ID = 26397]
2. strongly alkaline solutions [Option ID = 26398]
3. neutral solutions [Option ID = 26399]
4. None of these [Option ID = 26400]

80) As flow slows upon spilling out of the channel, the coarsest material settles out close to the channel, building berms parallel to the channel banks known as[Question ID = 6601]

1. natural levees [Option ID = 26401]
2. crevasses [Option ID = 26402]
3. terraces [Option ID = 26403]
4. point bar [Option ID = 26404]

81) Generally, colluvial valleys are found in[Question ID = 6602]

1. middle reaches [Option ID = 26405]
2. distal reaches [Option ID = 26406]
3. headwaters [Option ID = 26407]
4. at mountain and plains junction [Option ID = 26408]

82) Given below are two statements, one is labelled as Assertion A and the other is labelled as Reason R

Assertion A: The normal stress is greater on gentle slopes than on steep slopes.

Reason R: Because normal stress is proportional to the component of the weight of the soil oriented into the slope, and thus is a function of the cosine of the slope angle.

In light of the above statements, choose the *most appropriate* answer from the options given below

[Question ID = 6603]

- Both A and R are correct and R is the correct explanation of A
[Option ID = 26409]
- Both A and R are correct but R is NOT the correct explanation of A
[Option ID = 26410]
- A is correct but R is not correct
[Option ID = 26411]
- A is not correct but R is correct
[Option ID = 26412]

83) Given below are two statements, one is labelled as Assertion A and the other is labelled as Reason R

Assertion A: An abrupt reduction in sediment supply, such as occurs when a dam is constructed across a stream, typically results in channel incision and coarsening of bedload sediments downstream.

Reason R: Increased discharge or frequency of low-flow events below a dam cause channel narrowing in downstream reaches.

In light of the above statements, choose the *most appropriate* answer from the options given below

[Question ID = 6604]

- Both A and R are correct and R is the correct explanation of A
[Option ID = 26413]
- Both A and R are correct but R is NOT the correct explanation of A
[Option ID = 26414]
- A is correct but R is not correct
[Option ID = 26415]
- A is not correct but R is correct
[Option ID = 26416]

84) Match List I with List II

List I	List II
Textures/structures	Appropriate processes
A. Comb structure	I. Coherent exsolution
B. Spinifex texture	II. Cavity filling
C. Cumulus texture	III. Gravity settling
D. Oriented intergrowth	IV. Annealing
	V. Quenching

Choose the correct answer from the options given below:

[Question ID = 6605]

- A -II, B -V, C - III, D - I [Option ID = 26417]
- A -III, B -I , C -II , D - V [Option ID = 26418]
- A - I, B -V , C -IV , D - II [Option ID = 26419]
- A - II, B - V, C - IV, D - I [Option ID = 26420]

85) Match List I with List II

List I	List II
Point Group	Symmetry elements
A. 23	I. $1A_3, 3A_2$
B. 32	II. $3A_2, 4A_3$
C. 4mm	III. $3A_2$
D. 222	IV. $1A_4, 4C_2$
	V. $1A_4, 6C_2$

Choose the correct answer from the options given below:

[Question ID = 6606]

- A -II , B -I, C -IV, D - III
[Option ID = 26421]
- A -V , B -IV , C -III , D - II
[Option ID = 26422]
- A - III, B -I , C -II , D -V
[Option ID = 26423]
- A -V, B -III, C -I, D - II

86) Which of the following groups of elements is concentrated to produce ore deposits in pegmatites?[Question ID = 6607]

1. Mo, Cu, Au, Be [Option ID = 26425]
2. Be, Sn, Li, W [Option ID = 26426]
3. Au, Zn, Li [Option ID = 26427]
4. Cu, Au, W [Option ID = 26428]

87) According to IUGs classification, a leucocratic plutonic igneous rock containing 10 modal % quartz and Plagioclase/(plagioclase + K-feldspar) ratio at 45 is termed as[Question ID = 6608]

1. Quartz monzonite [Option ID = 26429]
2. Monzonite [Option ID = 26430]
3. Quartz monzodiorite [Option ID = 26431]
4. Monzodiorite [Option ID = 26432]

88) The chemical composition of Jadeite is[Question ID = 6609]

1. $\text{Na}(\text{Al Si}_2\text{O}_6)\text{H}_2\text{O}$ [Option ID = 26433]
2. $\text{NaAl}(\text{Si}_2\text{O}_6)$ [Option ID = 26434]
3. $\text{LiAl}(\text{Si}_2\text{O}_6)$ [Option ID = 26435]
4. $\text{Al}_2(\text{SiO}_4)(\text{OH},\text{F})_2$ [Option ID = 26436]

89) Number of ^4He produced due to decay of ^{238}U to ^{206}Pb is[Question ID = 6610]

1. 2 [Option ID = 26437]
2. 6 [Option ID = 26438]
3. 8 [Option ID = 26439]
4. 10 [Option ID = 26440]

90) In leucite- Silica binary system, incongruently melting intermediate compound is[Question ID = 6611]

1. KAlSi_3O_8 [Option ID = 26441]
2. KAlSiO_4 [Option ID = 26442]
3. $\text{NaAlSi}_3\text{O}_8$ [Option ID = 26443]
4. KAlSi_2O_6 [Option ID = 26444]

91) Calc- alkaline basalts predominantly occur in[Question ID = 6612]

1. Rift valleys [Option ID = 26445]
2. Transform fault zones [Option ID = 26446]
3. Mid-oceanic ridges [Option ID = 26447]
4. Subduction zones [Option ID = 26448]

92) Cyprus type massive sulphide deposits are [Question ID = 6613]

1. Formed by hydrothermal emanation on the ocean floor [Option ID = 26449]
2. Related to basic lavas in intracratonic rifts [Option ID = 26450]
3. Formed due to liquid immiscibility in sulphide rich mafic magma [Option ID = 26451]
4. Related to hydrothermal fluid from granitoids [Option ID = 26452]

93) A turbulent, fast moving cloud of hot gas and ash erupted from a volcano that form during explosive eruptions as columns of erupted material collapse or during non-explosive eruptions when volcanic rock collapses is called[Question ID = 6614]

1. Ash fall deposits [Option ID = 26453]
2. Ash flow deposits [Option ID = 26454]
3. Surge deposits [Option ID = 26455]
4. Nuée Ardente [Option ID = 26456]

94) Match the localities in List I with their corresponding mineral deposits in List II

List I	List II
Localities	Mineral deposits
A. Jhamarkotra	I. Gold mines
B. Hutti	II. Polymetallic sulfides
C. Dariba	III. Coal field
D. Raniganj	IV. Phosphorite

Choose the correct answer from the options given below:

[Question ID = 6615]

1. A - IV, B - I, C - II, D - III [Option ID = 26457]
2. A - IV, B - II, C - I, D - III [Option ID = 26458]
3. A - IV, B - III, C - I, D - II [Option ID = 26459]
4. A - II, B - I, C - III, D - IV [Option ID = 26460]

95) Match the tectonic setting in List I with their corresponding associates in List II

List I	List II
A. Subduction zones	I. Salt domes

B. Spreading centre	II. Diamondiferous kimberlites
C. Intracontinental rift	III. Porphyry copper
D. Passive continental margin	IV. Black smoker

Choose the correct answer from the options given below

[Question ID = 6616]

1. A - III, B - IV, C - II, D - I [Option ID = 26461]
2. A - II, B - I, C - III, D - IV [Option ID = 26462]
3. A - I, B - II, C - IV, D - III [Option ID = 26463]
4. A - IV, B - III, C - I, D - II [Option ID = 26464]

96) The garnet + omphacite assemblage represents[Question ID = 6617]

1. Blueschist facies [Option ID = 26465]
2. Amphibolite facies [Option ID = 26466]
3. Eclogite facies [Option ID = 26467]
4. Zeoite facies [Option ID = 26468]

97) Point group 422 belongs to[Question ID = 6618]

1. Cubic system [Option ID = 26469]
2. Tetragonal system [Option ID = 26470]
3. Orthorhombic system [Option ID = 26471]
4. Monoclinic system [Option ID = 26472]

98) The silica content in alkali syenites is lower than in other syenites because the former contains[Question ID = 6619]

1. Low amount of quartz [Option ID = 26473]
2. Large amount of anorthitic plagioclase [Option ID = 26474]
3. Significant amount of feldspathoids [Option ID = 26475]
4. Large amount of olivine [Option ID = 26476]

99) In which of the following oil fields of India, coal bed is the petroleum reservoir rock?[Question ID = 6620]

1. Kalol [Option ID = 26477]
2. Lakua [Option ID = 26478]
3. Narimanan [Option ID = 26479]
4. Panna [Option ID = 26480]

100) The generalised chemical composition of mica is[Question ID = 6621]

1. $X_2Y_{4-6}Z_8O_{20}(OH,F)_4$ [Option ID = 26481]
2. $X_{4-6}Y_2Z_8O_{20}(OH,F)_4$ [Option ID = 26482]
3. $XY_{4-6}Z_8O_{20}(OH,F)_4$ [Option ID = 26483]
4. $X_2Y_{4-6}Z_6O_{20}(OH,F)_4$ [Option ID = 26484]

