Topic:- DU_J19_MPHIL_GEO

1) Specific capacity of a tubewell is a functions of: [Question ID = 2252]

1. Tubewell discharge [Option ID = 9005]
2. All of the above [Option ID = 9008]
3. Formation loss (BQ) [Option ID = 9006]
4. well loss (CQ^2) [Option ID = 9007]

Correct Answer :-

- Tubewell discharge [Option ID = 9005]

2) Distribution of isograds in Barrovian patterns can be considered to represent:

[Question ID = 2266]

1. Contact metamorphism [Option ID = 9061]
2. Regional metamorphism of burial type [Option ID = 9063]
3. Regional metamorphism of intermediate P series [Option ID = 9062]
4. Regional metamorphism of low P series [Option ID = 9064]

Correct Answer :-

- Contact metamorphism [Option ID = 9061]

3) The Pokharan boulder bed at the base of the Marwar supergroup is related to: [Question ID = 2271]

1. Glaciofluvial deposit [Option ID = 9083]
2. Alluvial fan deposit [Option ID = 9081]
3. Aeolian deposit [Option ID = 9084]
4. Submarine fan deposit [Option ID = 9082]

Correct Answer :-

- Alluvial fan deposit [Option ID = 9081]

4) The behaviour of ordinary (OR) and extraordinary (ER) ray through a Nicol prism is defined by: [Question ID = 2282]

1. The OR is totally reflected but ER emerges at the end [Option ID = 9126]
2. The ER is totally reflected but OR emerges at the end [Option ID = 9125]
3. Both OR and ER are totally reflected [Option ID = 9127]
4. Both OR and ER are transmitted [Option ID = 9128]

Correct Answer :-

- The ER is totally reflected but OR emerges at the end [Option ID = 9125]

5) Evaluate the two statements and choose the correct option from:
Statement I- In crystallization from a magma, early crystal will be composed of magnesian olivines, pyroxenes with a high Mg/Fe+2 ratio and calcic plagioclases

Statement II- Successive liquids formed from basaltic magma will be progressively enriched in (Na+K)/Ca, in Fe+2/Mg and in (Na+K)/Fe+2

[Question ID = 2263]

1. Statement I is correct and II incorrect [Option ID = 9049]
2. Statement II is correct and I incorrect [Option ID = 9050]
3. Statement I and II are incorrect [Option ID = 9052]
4. Statement I and II are correct [Option ID = 9051]

Correct Answer :-

- Statement I is correct and II incorrect [Option ID = 9049]

6) Which amongst the following represents crystal form of two non-parallel faces related by a twofold rotation? [Question ID = 2264]

1. Sphenoid [Option ID = 9056]
2. Pinacoid [Option ID = 9054]
3. Dome [Option ID = 9055]
4. Pedion [Option ID = 9053]

Correct Answer :-

- Pedion [Option ID = 9053]

7) Maximum separation of the reflectance value of vegetation, soil, and water is seen in: [Question ID = 2268]

1. Red band [Option ID = 9071]
2. Blue band [Option ID = 9069]
3. Green band [Option ID = 9070]
4. Infrared band [Option ID = 9072]

Correct Answer :-

- Blue band [Option ID = 9069]

8) If competent layers of different thickness are encased close to each other in a relatively incompetent material, which type of folds is most likely to be produced by layer-parallel shortening? [Question ID = 2247]

1. harmonic folds [Option ID = 8985]
2. polyharmonic folds [Option ID = 8987]
3. disharmonic folds [Option ID = 8986]
4. no folding of layers. [Option ID = 8988]

Correct Answer :-

- harmonic folds [Option ID = 8985]

9) The Cumbum Formation of the Cuddapah Supergroup is characterized by: [Question ID = 2278]

1. Shallow marine carbonates [Option ID = 9110]
2. Deep water facies with black shales [Option ID = 9109]
3. Fluvio-glacial sediments [Option ID = 9112]
4. Shallow water clastics [Option ID = 9111]

Correct Answer :-

- Deep water facies with black shales [Option ID = 9109]

10) Saurischian dinosaurs are distinguished from ornithischian dinosaurs in having

[Question ID = 2260]

1. Tetraradiate pelvis [Option ID = 9037]
2. Triradiate pelvis [Option ID = 9038]
3. Locomotion [Option ID = 9039]
4. None of the above [Option ID = 9040]

Correct Answer :-

- Tetraradiate pelvis [Option ID = 9037]

11) Authigenic precipitation of K rich mica in shallow marine sediments during low sedimentation rate refers to: [Question ID = 2277]

1. Rapid fall of sea level [Option ID = 9107]
2. Large storm [Option ID = 9108]
3. Flow expansion [Option ID = 9105]
4. Glaucony [Option ID = 9106]

Correct Answer :-

- Flow expansion [Option ID = 9105]

12) In symmetry operations reflection in a point, reflection in a line and reflection in a plane can be represented respectively as: [Question ID = 2265]

1. Inversion, mirror reflection and reversal [Option ID = 9060]
2. Reversal, inversion and mirror reflection [Option ID = 9057]
3. Reversal, mirror reflection and inversion [Option ID = 9059]
4. Inversion, reversal and mirror reflection [Option ID = 9058]

Correct Answer :-

- Reversal, inversion and mirror reflection [Option ID = 9057]

13) Mr. Singh looks down onto a broad valley but can't find the stream that carved it. Mr. Singh (correctly!) concludes that this represents a(n)_____ stream valley: [Question ID = 2254]

1. youthful [Option ID = 9015]
2. misfit [Option ID = 9016]
3. impotent [Option ID = 9013]
4. overfit [Option ID = 9014]

Correct Answer :-

- impotent [Option ID = 9013]

14) As one moves away from MOR, the depth and age of the oceanic lithosphere .....due to compensation: [Question ID = 2286]

1. Both depth and age decrease [Option ID = 9143]
2. Depth decreases but age increases [Option ID = 9144]
3. Depth increases but age remains same [Option ID = 9141]
4. Both depth and age increase [Option ID = 9142]

Correct Answer :-

- Depth increases but age remains same [Option ID = 9141]

15) The carbon isotopic composition of the paleosol carbonates with $\delta^{13}C$ values ranging from -9.4‰ to -11.3‰ indicate: [Question ID = 2292]

1. Dominance of C3 type of vegetation [Option ID = 9165]
2. Dominance of C4 type vegetation [Option ID = 9166]
3. Dominance of a mixed vegetation [Option ID = 9168]
4. Dominance of CAM vegetation [Option ID = 9167]

Correct Answer :-

- Dominance of C3 type of vegetation [Option ID = 9165]

16) Stream saltation is: [Question ID = 2253]

1. a measure of the total dissolved solids in a stream [Option ID = 9012]
2. a jumping process in bed load [Option ID = 9011]
3. the dissolution of salty minerals by flowing water [Option ID = 9009]
4. the grinding of abrasion potholes in a stream bed [Option ID = 9010]

Correct Answer :-

- the dissolution of salty minerals by flowing water [Option ID = 9009]

17) The thrusting of the Lesser Himalayan rocks over the Sub-Himalayan rocks is defined by: [Question ID = 2290]

1. MCT [Option ID = 9158]
2. ITSZ [Option ID = 9157]
3. MFT [Option ID = 9160]
4. MBT [Option ID = 9159]

Correct Answer :-

- ITSZ [Option ID = 9157]

18) The last 4,200 years has been classified as the distinct age of our planet is: [Question ID = 2273]

1. Northgrippian [Option ID = 9091]
2. Greenlandian [Option ID = 9089]
3. Calabrian [Option ID = 9092]
4. Meghalayan [Option ID = 9090]

Correct Answer :-

- Greenlandian [Option ID = 9089]

19) A region is characterized by the following: few lakes or swamps, well-developed floodplains, upland divides with even slopes and with rounded-to-knife-edged summits within easy view of the stream margin. William Morrison Davis would have gazed upon this region and classified it as: [Question ID = 2255]

1. youthful [Option ID = 9019]
2. old age [Option ID = 9020]
3. adolescent [Option ID = 9017]
4. mature [Option ID = 9018]

Correct Answer :-

- adolescent [Option ID = 9017]

20) Mesozoic reefs are formed primarily by [Question ID = 2262]

1. Sponges [Option ID = 9045]
2. Rugose corals [Option ID = 9047]
3. Scleractinian corals [Option ID = 9048]
4. Archaeocyathids [Option ID = 9046]

Correct Answer :-

- Sponges [Option ID = 9045]

21) The kerogen consisting of woody terrestrial source material that typically generates gas is: [Question ID = 2272]

1. Type-I [Option ID = 9085]
2. Type-III [Option ID = 9087]
3. Type-IV [Option ID = 9088]
4. Type-II [Option ID = 9086]

Correct Answer :-

- Type-I [Option ID = 9085]

22) The braided channel is defined by: [Question ID = 2289]

1. Low width/depth ratio, steep slope, low bed load, low sinuosity [Option ID = 9155]
2. High width/depth ratio, gentle slope, high bed load, high sinuosity [Option ID = 9156]
3. Low width/depth ration, gentle slope, low bed load, high sinuosity [Option ID = 9154]
4. High width/depth ratio, steep slope, high bed load, low sinuosity [Option ID = 9153]

Correct Answer :-

- High width/depth ratio, steep slope, high bed load, low sinuosity [Option ID = 9153]

23) During the last glacial maxima (LGM) the global sea level was .....lower than it is today: [Question ID = 2279]

1. 400 m [Option ID = 9113]
2. 100 m [Option ID = 9114]
3. 300 m [Option ID = 9115]
4. 200 m [Option ID = 9116]

Correct Answer :-

- 400 m [Option ID = 9113]

24) During groundwater pumping through a tubewell at high discharge, the drawdown observed inside the tubewell: [Question ID = 2251]

1. Is generally more then expected drawdown in the aquifer [Option ID = 9001]
2. Is generally same as expected drawdown in the aquifer [Option ID = 9003]
3. None of the above [Option ID = 9004]
4. Is generally less then expected drawdown in the aquifer [Option ID = 9002]

Correct Answer :-

- Is generally more then expected drawdown in the aquifer [Option ID = 9001]

25) If there was no atmosphere, the average surface temperature of the Earth would have been: [Question ID = 2285]

1. -20°C [Option ID = 9138]
2. 15°C [Option ID = 9140]
3. 20°C [Option ID = 9137]
4. -8.5°C [Option ID = 9139]

Correct Answer :-

- 20°C [Option ID = 9137]

26) Well loss in pumping well leads to: [Question ID = 2248]

1. Full loss of drawdown [Option ID = 8991]
2. Increase in drawdown [Option ID = 8989]
3. Decrease in drawdown [Option ID = 8990]
4. Loss in recovery of pumping well [Option ID = 8992]

Correct Answer :-

- Increase in drawdown [Option ID = 8989]

27) A SOI toposheet 44D/11 has a stream stretch measured as 5.5 cm, this corresponds to ……..km on land: [Question ID = 2281]

1. 5.75 km [Option ID = 9124]
2. 3.75 km [Option ID = 9121]
3. 4 .75km [Option ID = 9122]
4. 2.75 km [Option ID = 9123]

Correct Answer :-

- 3.75 km [Option ID = 9121]

28) Paired terraces form when _____ of the river channel: [Question ID = 2270]

1. none of the above [Option ID = 9080]
2. vertical incision is more rapid than lateral migration [Option ID = 9078]
3. lateral migration is more rapid than vertical incision [Option ID = 9077]
4. there is only lateral migration [Option ID = 9079]

Correct Answer :-

- lateral migration is more rapid than vertical incision [Option ID = 9077]

29) Which of the following data gives maximum vertical accuracy? [Question ID = 2269]

1. ASTER [Option ID = 9076]
2. SRTM [Option ID = 9075]
3. LiDAR [Option ID = 9073]
4. RADAR [Option ID = 9074]

Correct Answer :-

- LiDAR [Option ID = 9073]

30) The mean annual surface/subsurface temperature of dry base glaciers is about: [Question ID = 2291]

1. 0°C [Option ID = 9162]
2. -10°C [Option ID = 9161]
3. +20°C [Option ID = 9164]
4. -20°C [Option ID = 9163]

Correct Answer :-

- -10°C [Option ID = 9161]

31) Estimation of Storativity using Theis equation for unsteady state radial flow to a tubewell in confined aquifer can be done using:

[Question ID = 2250]

1. Drawdown & time data of the observation well near pumping well [Option ID = 8997]
2. None of the above [Option ID = 9000]
3. Only after we estimate transmissivity value [Option ID = 8998]
4. Drawdown & time data of the observation well near pumping well and only after we estimate transmissivity value [Option ID = 8999]

Correct Answer :-

- Drawdown & time data of the observation well near pumping well [Option ID = 8997]

32) The river type defined by multiple channels, large stable islands and dominance of suspension load is: [Question ID = 2275]

1. Meandering River [Option ID = 9098]
2. Anastomosing river [Option ID = 9099]
3. Braided River [Option ID = 9100]
4. Straight river [Option ID = 9097]

Correct Answer :-

- Straight river [Option ID = 9097]

33) The sedimentary structures marked by mud drapes and bipolar cross stratification demarcate: [Question ID = 2276]

1. Deep water currents [Option ID = 9103]
2. Tidal current processes [Option ID = 9102]
3. Waves and storm processes [Option ID = 9101]
4. Fluvial processes [Option ID = 9104]

Correct Answer :-

- Waves and storm processes [Option ID = 9101]

34) The sedimentary shell of Earth is marked by ~50% of ..... [Question ID = 2288]

1. Limestone [Option ID = 9152]
2. Sandstone [Option ID = 9150]
3. Shale/mudrocks [Option ID = 9149]
4. Conglomerate [Option ID = 9151]

Correct Answer :-

- Shale/mudrocks [Option ID = 9149]

35) Amount of the bed load in the sedimentary flux from all rivers to ocean is commonly:

[Question ID = 2284]

1. More than suspended load [Option ID = 9134]
2. <10 % of the suspended load [Option ID = 9135]

3. > 10% of the suspended load [Option ID = 9136]
4. Equal to suspended [Option ID = 9133]

Correct Answer :-

- Equal to suspended [Option ID = 9133]

36) In a thrust sequence, the first (earliest) thrust forms ahead and successively younger thrusts form in the hanging wall of the preceding thrusts. The sequence is called: [Question ID = 2246]

1. none of the above. [Option ID = 8984]
2. a break-back sequence [Option ID = 8982]
3. an irregular sequence [Option ID = 8983]
4. a piggyback sequence [Option ID = 8981]

Correct Answer :-

- a piggyback sequence [Option ID = 8981]

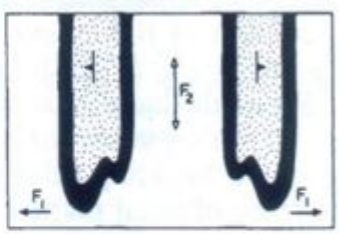
37) Assertion (A): The amount and character of strain can be assessed with greater precision in deformed fossils than in inorganic structures
Reasoning (R): Undeformed specimens of same species better preserve original Shape [Question ID = 2259]

1. A is false [Option ID = 9035]
2. R is false [Option ID = 9036]
3. R explains A [Option ID = 9033]
4. R does not explain A [Option ID = 9034]

Correct Answer :-

- R explains A [Option ID = 9033]

38)



The above figure shows a 'mirror-image' type symmetrical fold interference pattern. Such an interference pattern is characteristic of which type of superposed fold geometry?

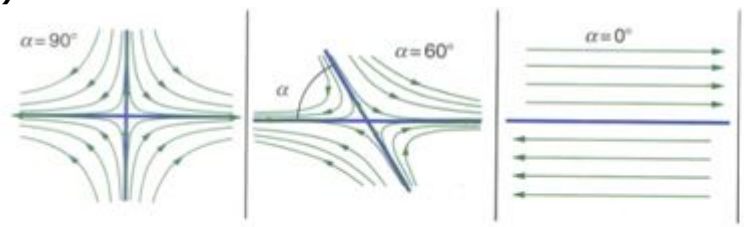
[Question ID = 2243]

1. Non-plane, cylindrical [Option ID = 8971]
2. Non-plane, non-cylindrical [Option ID = 8970]
3. Plane, non-cylindrical [Option ID = 8969]
4. Plane cylindrical [Option ID = 8972]

Correct Answer :-

- Plane, non-cylindrical [Option ID = 8969]

39)



The above figure shows the particle paths of flow characteristic of three different types of deformation. From left to right they are:

[Question ID = 2245]

1. Simple shear, General shear, Pure shear [Option ID = 8978]
2. Pure shear, General shear, Simple shear [Option ID = 8979]
3. Simple shear, Pure shear, General shear [Option ID = 8980]
4. Pure shear, Simple shear, General shear [Option ID = 8977]

Correct Answer :-

- Pure shear, Simple shear, General shear [Option ID = 8977]

40) The upstream geomorphic response of dam on a river profile is characterised by: [Question ID = 2274]

1. Flattening of the profile and deltaic deposition [Option ID = 9095]
2. Steepening of the profile and increased erosion [Option ID = 9093]
3. Steepening of the profile and increased deposition [Option ID = 9094]
4. Flattening of the profile and increased incision [Option ID = 9096]

Correct Answer :-

- Steepening of the profile and increased erosion [Option ID = 9093]

41) A polar wandering curve: [Question ID = 2256]

1. is a graph utilized to interpret the Richter Scale [Option ID = 9024]
2. shows that the continents wandered relative to generally-fixed pole positions [Option ID = 9023]
3. shows that the magnetic poles wandered relative to fixed continents [Option ID = 9021]
4. shows that the rotational poles wandered to fixed continents [Option ID = 9022]

Correct Answer :-

- shows that the magnetic poles wandered relative to fixed continents [Option ID = 9021]

42) Which of the following facies is absent in the low P series of metamorphism of mafic rocks? [Question ID = 2267]

1. Epidote hornfels facies [Option ID = 9068]
2. Epidote amphibolite facies [Option ID = 9067]
3. Greenschist facies [Option ID = 9065]
4. Sanidintie facies [Option ID = 9066]

Correct Answer :-

- Greenschist facies [Option ID = 9065]

43) Which of the following oceanic processes accounts for most of the earth's sedimentary rock containing phosphate? [Question ID = 2258]

1. Subtropical convergence [Option ID = 9032]
2. Equatorial divergence [Option ID = 9031]
3. Coastal upwelling [Option ID = 9030]
4. Thermohaline circulation [Option ID = 9029]

Correct Answer :-

- Thermohaline circulation [Option ID = 9029]

44) Which of the following is considered as the largest extinction in Earth's history that killed 90-96% of the species? [Question ID = 2280]

1. Ordovician-Silurian [Option ID = 9117]
2. Late Devonian [Option ID = 9118]
3. Cretaceous-Paleogene [Option ID = 9120]
4. Permian-Triassic [Option ID = 9119]

Correct Answer :-

- Ordovician-Silurian [Option ID = 9117]

45) The Skolithos assemblage of Ichnofacies defined by vertical tube-like features refer to: [Question ID = 2283]

1. Sandy shore [Option ID = 9129]
2. Sub-littoral [Option ID = 9130]
3. Bathyal zone [Option ID = 9131]
4. Abyssal Zone [Option ID = 9132]

Correct Answer :-

- Sandy shore [Option ID = 9129]

46) ———————— structures indicate evolution from a common ancestor

[Question ID = 2261]

1. Analogous [Option ID = 9041]
2. Homologous [Option ID = 9042]
3. vestigial [Option ID = 9043]
4. None of the above [Option ID = 9044]

Correct Answer :-

- Analogous [Option ID = 9041]

47) A fold-mullion structure is typically the surface expression of hinges of

[Question ID = 2244]

1. cuspate-lobate folds [Option ID = 8974]
2. chevron folds [Option ID = 8975]
3. none of the above. [Option ID = 8976]
4. ptygmatic folds [Option ID = 8973]

Correct Answer :-

- ptygmatic folds [Option ID = 8973]

48) Ekman transport occurs in which part of the ocean [Question ID = 2257]

1. Upper ocean [Option ID = 9025]
2. Meso pelagic layer [Option ID = 9026]
3. Ocean bottom [Option ID = 9028]
4. Bathy pelagic layer [Option ID = 9027]

Correct Answer :-

- Upper ocean [Option ID = 9025]

49) The significant water level fluctuation is generally:

[Question ID = 2249]

1. Both Inversely related to change of atmospheric pressure in confined aquifers and directly related to change of Tidal amplitude in unconfined and confined aquifers [Option ID = 8995]
2. Directly related to change of Tidal amplitude in unconfined and confined aquifers [Option ID = 8994]
3. Inversely related to change of atmospheric pressure in confined aquifers [Option ID = 8993]
4. None of the above [Option ID = 8996]

Correct Answer :-

- Inversely related to change of atmospheric pressure in confined aquifers [Option ID = 8993]

50) The solar radiation/electromagnetic spectrum provides .....of all energy received by the Earth: [Question ID = 2287]

1. 80.98% [Option ID = 9147]
2. 99.98% [Option ID = 9148]
3. 10.98% [Option ID = 9145]
4. 50.98% [Option ID = 9146]

Correct Answer :-

- 10.98% [Option ID = 9145]