

RGUPET 22
Common Entrance Test, 2022
Ph.D. in GEOLOGY

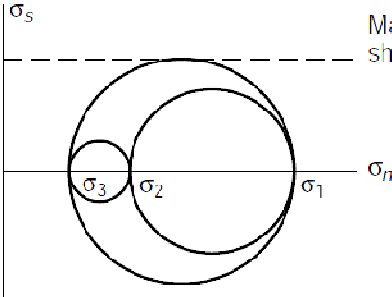
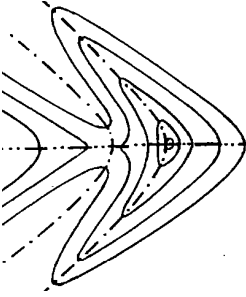
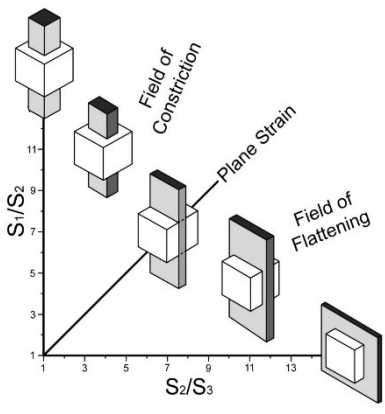
1	Research is generally expected to _____.					
	a) study the existing literature in a field	b) generate new principles and theories	c) synthesize the ideas given by others	d) evaluate the findings of a study	b	generate new principles and theories
2	One of the essential characteristics of research is _____.					
	a) replicability	b) generalizability	c) usability	d) objectivity	d	objectivity
3	An academic association assembled at one place to discuss the progress of its work and future plans is known as					
	a) conference	b) seminar	c) workshop	d) symposium	a	conference
4	The statement 'honesty is the best policy' is _____.					
	a) a fact	b) a value	c) an opinion	d) a value judgement	b	a value
5	A hypothesis can be stated as _____.					
	a) statement of fact	b) supposition based on the past experience	c) tentative statement whose validity is still to be tested	d) all the above	c	tentative statement whose validity is still to be tested
6	Synopsis of a research work is _____.					
	a) summary of findings of the	b) work plan of research	c) combination of objective and methodology	d) summary of previous works	a	summary of findings of the research

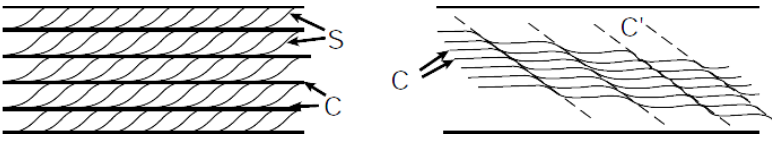
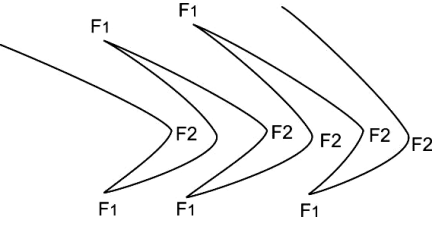
	research					
7	Null hypothesis a statement showing _____.					
	a) no difference	b) significant difference	c) linear difference	d) both b and c	a	no difference
8	Random sampling has the advantage since it is					
	a) produces reasonably accurate results	b) free from personal biases	c) cost saving	d) all the above	d	all the above
9	In which case, the formation of hypothesis may not be mandatory?					
	a) normative studies	b) experimental studies	c) survey studies	d) investigate historical studies	a	normative studies
10	What is Precision?					
	a) a measure of analytical repeatability	b) closeness to true value	c) same as accuracy	d) always away from true value	a	a measure of analytical repeatability
11	Median is _____.					
	a) arithmetic mean of the infinite number of measurements	b) arithmetic mean of finite number of measurements	c) estimate of population mean	d) midway in the frequency distribution	d	midway in the frequency distribution
12	Which of the following is a continuous probability distribution?					
	a) binomial distribution	b) Poisson distribution	c) Gaussian distribution	d) Stoke's distribution	c	Gaussian distribution

13	A law is basically a theory that has been _____.					
	a) extensively tested	b) applies to wide range of space and time	c) widely accepted by the scientific community	d) all the above	d	all the above
14	Which of the following is the suggested outline for report writing?					
	a) prefatory material	b) primary material	c) supplementary material	d) analytic material	a	prefatory material
15	In geochemical analysis, contamination may not arise from					
	a) reagents	b) sample handling	c) lab cleanliness	d) non-reactive storage containers	d	non-reactive storage containers
16	Which of the following is not a data processing technique?					
	a) Data editing	b) Coding	c) Data classification	d) Data mining	d	Data mining
17	In the context of testing of hypotheses, Type I error is made when:					
	a) null hypothesis is true and it is accepted.	b) null hypothesis is true and it is rejected.	c) null hypothesis is false and it is accepted.	d) null hypothesis is false and it is rejected.	b	null hypothesis is true and it is rejected.
18	Which of the following is not necessarily a quality of good research?					
	a) Unique	b) Systematic	c) Logical	d) Empirical	a	Unique
19	A hypothesis in which the researcher predicts a relationship between variables and describes the nature of the relationship is a:					
	a) directional hypothesis.	b) non-directional hypothesis	c) existential hypotheses.	d) universal hypothesis	a	Directional hypothesis.
20	Every research project should contribute to:					

	a) researcher's development.	b) financial benefit.	c) knowledge.	d) methodology.	c	knowledge
21	Which of the following is not considered as intellectual property?					
	a) Patents	b) Trademarks	c) Trade license	d) Copyright	c	Trade license
22	Ethical norms in research do not involve guidelines for:					
	a) thesis format.	b) copyright.	c) patenting policy.	d) data sharing policy.	a	thesis format.
23	In which part of the thesis do the figures and tables included?					
	a) Appendix	b) A separate chapter	c) The concluding chapter	d) The text itself	d	The text itself
24	Which of the following is a format of citing bibliography in research?					
	a) APA	b) OPAC	c) SPSS	d) GRASS	a	APA
25	Which of the following evaluates the relative importance of a journal within its field?					
	a) h-index	b) i10-index	c) g-index	d) Impact factor	d	Impact factor

26	Which of the following structural analysis is used to determine the movement paths that rocks or parts of rocks have taken during transformation from the undeformed to the deformed state?					
	a) Tectonic analysis	b) Kinematic analysis	c) Dynamic Analysis	d) Strain analysis	b	Kinematic analysis
27	The following figure represents which state of stress?					

					
	a) uniaxial stress	b) biaxial stress	c) triaxial stress	d) hydrostatic stress	c triaxial stress
28	A cohesive fault rock composed of broken, crushed, or rolled grains is				
	a) fault gouge	b) fault breccia	c) cataclasite	d) mylonite	c cataclasite
29	The following diagram represents which type of fold interference pattern?				
					
	a) Type 0	b) Type 1	c) Type 2	d) Type 3	c Type 2
30	What is the value of 'k' for the 'plane strain' line in the following Flinn diagram?				
					
	a) 0	b) 1	c) ∞	d) $1 < k < \infty$	b 1

31	<p>The following figure represents S-C and C-C' fabric.</p>  <p>Which of the following statements about the shear sense is correct?</p>				
	a) S-C is sinistral and C-C' is dextral	b) S-C is dextral and C-C' is sinistral	c) Both are dextral	d) Both are sinistral	e) Both are dextral
32	<p>Seismic waves bend and velocity changes at specific depths inside the earth, called seismic discontinuities. Which of the following are responsible for the change of seismic velocity at seismic discontinuities?</p> <p>I. Change in composition</p> <p>II. Change in phase</p> <p>III. Change in density</p>				
	a) I only	b) I & II only	c) II & III only	d) I, II & III	e) I, II & III
33	<p>Following figure represents an interference structure between two sets of folds, F_1 and F_2.</p>  <p>Which two of the following statements are correct?</p> <p>I. Both F_1- and F_2- hinge lines are parallel</p> <p>II. Both F_1- and F_2-folds are planar.</p> <p>III. F_1-folds are non-planar but F_2- folds are planar</p> <p>IV. Both F_1- and F_2- folds are non-cylindrical</p>				
	a) I&II	b) III&IV	c) I&III	d) II &III	e) I&III

34	In which layer does the Earth's magnetic field generated?					
	a) Crust	b) Mantle	c) Outer core	d) Inner core	c	Outer core
35	Which was the earliest well documented supercontinent that formed at 1.3-1.0 Ga and fragmented at 750-600 Ma?					
	a) Pangea	b) Gondwana	c) Laurentia	d) Rodinia	d	Rodinia
36	Which of the following is an example of continental transform fault?					
	a) Dauki Fault	b) San Andreas Fault	c) Karakoram Fault	d) Sagaing Fault	b	San Andreas Fault
37	Which of the following processes are responsible for the formation of desert pavement?					
	<p>I. Reptation</p> <p>II. Deflation</p> <p>III. Water sorting</p> <p>IV. Upward clast migration</p>					
	a) I & II	b) I, II & IV	c) II, III & IV	d) I, II, III & IV	c	II, III & IV
38	Radial drainage pattern is the characteristics of which of the following?					
	a) Folded sedimentary terrain	b) Volcanic cone	c) Structural dome	d) Jointed igneous or metamorphic terrain	b	Volcanic cone
39	Which of the following is solar constant?					
	a) 343 W/m ²	b) 434 W/m ²	c) 1360 W/m ²	d) 1630 W/m ²	c	1360 W/m ²
40	A ridge formed by resistant rock with gentle dip slope and steep scarp slope is known as:					
	a) Hogback	b) Razorback	c) Whaleback	d) Cuesta	d	Cuesta
41	Following is the planform view of a barchan dune. Which of the following is the direction of flow of wind?					

	a) North	b) East	c) South	d) West	b	East
42	<p>Which of the following conditions are required for the formation of paired fluvial terraces?</p> <p>I. Rapid uplift of the terrain</p> <p>II. Slow uplift of the terrain</p> <p>III. Rapid lateral migration of the channel</p> <p>IV. Slow lateral migration of the channel</p>					
	a) I & III	b) I & IV	c) III only	d) II & IV	b	I & IV
43	<p>During Last Glacial Maxima (LGM), what was the position of the sea level relative to the present-day sea level?</p>					
	a) 60 m below	b) 60 m above	c) 120 m below	d) 120 m above	c	120 m below
44	<p>Which of the following marks the furthest extent of glacier?</p>					
	a) Lateral moraine	b) Recessional moraine	c) Terminal moraine	d) Ground moraine	c	Terminal moraine
45	<p>Inverse grading is common in which type of sedimentary rocks?</p> <p>I. Fine grained sandstone</p> <p>II. Coarse grained sandstone</p> <p>III. Conglomerate</p>					
	a) I & II	b) II & III	c) I & III	d) I, II & III	b	II & III
46	<p>Grain supported carbonate rock where mud is more than 10% is</p>					

	a) packstone.	b) wackestone.	c) grainstone.	d) boundstone.	a	packstone.
47	Which is the most common type conglomerate?					
	a) Cataclastic conglomerate	b) Epiclastic conglomerate	c) Pyroclastic conglomerate	d) Meteoric conglomerate	b	Epiclastic conglomerate
48	Textural maturity of sandstone is determined by which of the following?					
	<p>I. Relative abundance of quartz grains</p> <p>II. Abundance of matrix</p> <p>III. Degree of rounding</p> <p>IV. Degree of sorting</p>					
	a) I & II	b) III & IV	c) I, II & III	d) II, III & IV	d	II, III & IV
49	According to Krumbein's phi-scale, the size of fine sand is between:					
	a) 0 & 1 ϕ	b) 1 & 2 ϕ	c) 2 & 3 ϕ	d) 3 & 4 ϕ	c	2 & 3 ϕ
50	For which of the following conditions, the entire bedform is preserved in climbing-ripple cross lamination?					
	<p>I. The angle of climb is less than the angle of the stoss slope</p> <p>II. The angle of climb is equal to the angle of the stoss slope</p> <p>III. The angle of climb is greater than the angle of the stoss slope</p>					
	a) I only	b) II only	c) I & II	d) II & III	d	II & III
51	Mechanical and intense chemical weathering of granite produce which type of sandstone?					
	a) Quartz arenite	b) Feldspathic arenite	c) Lithic arenite	d) Greywacke	a	Quartz arenite
52	Which of the following is the correct order according to the increasing grain size?					
	<p>I. Floodplain deposits</p> <p>II. Channel lag deposit</p> <p>III. Natural levee deposits</p>					

	IV. Point bar deposit					
	a) I, II, III, IV	b) I, II, IV, III	c) IV, III, II, I	d) I, III, IV, II	d	I, III, IV, II
53	The body of strata including the overlapping parts of the range zones of two specified taxa is known as:					
	a) taxon-range zone.	b) concurrent-range zone.	c) lineage zone.	d) assemblage zone.	b	concurrent range zone.
54	Which of the following is the primary unit of lithostratigraphy?					
	a) Bed	b) Member	c) Formation	d) Group	c	Formation
55	Which is the most abundant sedimentary rock in Earth's crust?					
	a) Sandstone	b) Limestone	c) Conglomerate	d) Shale	d	Shale
56	Which of the following combination is true for an alluvial fan?					
	<p>I. Long profile of alluvial fan is concave upward</p> <p>II. Long profile of alluvial fan is convex upward</p> <p>III. Transverse profile of alluvial fan is concave upward</p> <p>IV. Transverse profile of alluvial fan is convex upward</p>					
	a) I & III	b) I & IV	c) II & III	d) II & IV	b	I & IV
57	In which year The First National Mineral Policy (NMP) for non-coal, non-fuel minerals was enunciated by the Government of India?					
	a) 1957	b) 1993	c) 2008	d) 2012	b	1993
58	Which of the following scale is most suitable for reconnaissance survey?					
	a) 1:250	b) 1:2500	c) 1:25000	d) 1:250000	d	1:250000
59	Which correction in gravity prospecting considers surface irregularities in vicinity of the station?					
	a) Bouguer correction	b) Free-air correction	c) Terrain correction	d) Tidal correction	c	Terrain correction
60	Which of the following unit operation does not belong to production cycle?					

	a) Drilling	b) Haulage	c) Hoisting	d) Pumping	d	Pumping
61	Artificially supported openings are used in which of the following underground mining methods?					
	a) Long-wall mining	b) Open stoping	c) Shrinkage stoping	d) Room-and-pillar mining	a	Long-wall mining
62	In open-pit mining, the ratio of waste rock mined to ore is known as:					
	a) Working ratio	b) Stripping ratio	c) Recovery ratio	d) Mining ratio	b	Stripping ratio
63	A horizontal or nearly horizontal entrance to a mine known as:					
	a) Adit	b) Drift	c) Shaft	d) Raise	a	Adit
64	India is divided into how many seismic zones?					
	a) Four	b) Five	c) Six	d) Seven	a	Four
65	What is the magnitude of the largest earthquake ever recorded?					
	a) 8.5	b) 9.0	c) 9.5	d) 10.0	c	9.5
66	Who had started the study of crushed minerals immersed in water under microscope?					
	a) William Nicol	b) W.H. Bragg	c) Cordier	d) Wollaston	c	Cordier
67	Specific gravity of methylene iodine?					
	a) 2.8	b) 3.0	c) 3.2	d) 3.4	b	3.0
68	The structure of periclase, parallel to {111} section, is similar to					
	a) Aragonite Group	b) Calcite Group	c) Dolomite Group	d) Heamatite Group	d	Heamatite Group
69	Witherite is					
	a) Calcium carbonate	b) Magnesium carbonate	c) Barium carbonate	d) Strontium carbonate	c	Barium carbonate
70	Which of the following phyllosilicate minerals falls under trioctahedral series?					

	a) Gibbsite	b) Talc	c) Muscovite	d) pyrophyllite	b	Talc
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71	A solution contains 100g of dissolved NaCl (gram-molecular weight-58.44) in 1l water (gram-molecular weight-18.00). What is the mole fraction of NaCl in the solution?					
	a) 0.00152	b) 0.0152	c) 0.152	d) 1.52	b	0.0152
72	Incorporation of Ni into the crystal structure in a solidifying magma decreases in which of the following order?					
	a) Olivine > Opx > Cpx > Amphibole	b) Olivine > Cpx > Opx > Amphibole	c) Cpx > Opx > Amphibole > Olivine	d) Amphibole > Cpx > Opx > Olivine	a	Olivine > Opx > Cpx > Amphibole
73	Expansion of galaxies is inferred using					
	a) white-shift in light	b) blue-shift in light	c) red-shift in light	d) green-shift in light	c	red-shift in light
74	1 light year is approximately equal to					
	a) 10^{10} km	b) 10^{11} km	c) 10^{12} km	d) 10^{13} km	d	10^{13} km
75	1 AU is equal to					
	a) 149.6×10^6 km	b) 146.9×10^9 km	c) 149.6×10^9 km	d) 146.9×10^6 km	a	149.6×10^6 km
76	Henry's law relates the					
	a) solubility of solids	b) partial pressure of a gas and its concentration in solution	c) pressure and temperature gradient	d) velocity of light in different mediums	b	partial pressure of a gas and its concentration in solution
77	Which one of the following is a kind of exchange geothermometer?					

	a) Aluminosilicate polymorphs	b) Grt-Plg-Py-Qtz	c) Grt-Cpx	d) Grt-Rt- Al_2SiO_5 polymorphs	c	Grt-Cpx
78	Achondrites are a kind of					
	a) Iron meteorite	b) Stony-iron meteorite	c) Stony meteorite	d) Pallasite	c	Stony meteorite
79	Composition of middle continental crust is estimated to be					
	a) granitic	b) granodioritic	c) gabbro-granite mixture	d) mafic granulitic	c	gabbro-granite mixture

80	Polarization of seismic shear waves takes place in					
	a) outer core	b) inner core	c) Mohorovicic discontinuity	d) D'' layer	d	D'' layer
81	What would be the pressure at a depth of 35 km? Consider the density of overlying rocks around 2800 kg m^{-3} and gravity 9.8 ms^{-2} .					
	a) 0.56 Gpa	b) 0.76 Gpa	c) 0.96 Gpa	d) 1.16 Gpa	c	0.96 Gpa
82	In general, which of the rock type would have higher thorium (Th) concentrations?					
	a) Peridotite	b) Basalt	c) Granite	d) Average crust	d	Average crust
83	A magma's bulk viscosity approaches infinity when the fraction of crystals present in the magma is					
	a) 50%	b) 60%	c) 70%	d) 80%	b	60%
84	Tephra is a					
	a) Volcanic product	b) Hydrothermal product	c) Sedimentary product	d) Metamorphic product	a	Volcanic product

85	Ankaramites usually contain abundant phenocrysts of					
	a) Anorthite	b) Fayalite	c) Augite	d) Orthopyroxene	c	Augite
86	At the hot end, Soret fractionation produces					
	a) Higher Mg/Mg+Fe ratio	b) Lower Mg/Mg+Fe	c) Higher Ca/Ca+Na ratio	d) Identical concentration of Mg and Fe	a	Higher Mg/Mg+Fe ratio
87	Opx bearing granodiorite is known as					
	a) charnockite	b) opdalite	c) mangerite	d) enderbite	b	opdalite
88	Facies fossils are					
	a) restricted in geological time	b) restricted in geographical distribution	c) both restricted in geological time and geographical distribution	d) widespread in geological time and geographical distribution	d	widespread in geological time and geographical distribution
89	The suborder Textularina is present during					
	a) Cambrian to Recent	b) Ordovician to Permian	c) Triassic to Recent	d) Tertiary to Recent	a	Cambrian to Recent
90	The genera Pojetaia of the Class Bivalvia is first reported from					
	a) Denmark	b) North America	c) Siberia	d) China	d	China
91	A suture pattern of sharp lobes and rounded saddles in Cephalopods is known as					
	a) ammonitic	b) ceratitic	c) goniatic	d) agoniatic	c	goniatic
92	Jawed fishes evolved during					
	a) Cambrian	b) Ordovician	c) Silurian	d) Devonian	b	Ordovician

93	Which one of the following ore deposits is most characteristic of Late Proterozoic metallogenic epoch in Indian scenario?					
	a) Iron	b) Manganese	c) Chromium	d) Barium	d	Barium
94	Density of uraninite is					
	a) 5.9 to 6.1	b) 6.8 to 7.1	c) 7.0 to 7.5	d) 7.5 to 9.7	d	7.5 to 9.7
95	In which tectonic setting, porphyry copper deposits are usually found?					
	a) within plate	b) island-arc	c) mid-oceanic ridge	d) trench	b	island-arc
96	Which one of the following elements has least abundance in the solar system abundance curve?					
	a) carbon	b) boron	c) beryllium	d) lithium	c	beryllium
97	In case of negatron decay, the atomic number of daughter isotope is					
	a) increased by two	b) increased by one	c) decreased by one	d) decreased by two	b	increased by one
98	Atomic ratio of Sm/Nd in the solar system is					
	a) 0.031	b) 0.31	c) 3.1	d) 31.0	b	0.31
99	Atmospheric layers where convection takes place are					
	a) stratosphere and mesosphere	b) troposphere and stratosphere	c) troposphere and mesosphere	d) thermosphere and troposphere	c	troposphere and mesosphere
100	The Milankovitch cycles of the global climatic variation operate over the time scales of					
	a) <20 yr	b) 20-100 yr	c) 20-100 kilo yr	d) 20-100 million yr	c	20-100 kilo yr