

This booklet consists of **100** questions and **12** printed pages.

RGUCET/2023/PG/14

Series

NIL

RGUCET 2023
MASTER OF SCIENCE IN APPLIED GEOLOGY

Full Marks: 100

Time: 2 Hours

Roll No.

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Day and Date of Examination :

Signature of Invigilator(s) :

Signature of Candidate :

General Instructions:

PLEASE READ ALL THE INSTRUCTIONS CAREFULLY BEFORE MAKING ANY ENTRY.

1. DO NOT OPEN THIS TEST BOOKLET UNTIL YOU ARE TOLD TO DO SO.
2. Candidate must write his/her Roll Number on the space provided.
3. This Test Booklet contains 100 Multiple Choice Questions (MCQs). Each question carries 1 mark. There shall be negative marking of 0.25 against each wrong attempt.
4. Please check the Test Booklet to verify that the total pages and total number of questions contained in the test booklet are the same as those printed on the top of the first page. Also check whether the questions are in sequential order or not.
5. Candidates are not permitted to enter into the examination hall 15 minutes after the commencement of the entrance test or leave the examination hall before 30 minutes of end of examination.
6. Making any identification mark in the OMR Answer Sheet or writing Roll Number anywhere other than the specified places will lead to disqualification of the candidate.
7. Candidates shall maintain silence inside and outside the examination hall. If candidate(s) is/are found violating the instructions mentioned herein or announced in the examination hall, they will be summarily disqualified from the entrance test.
8. In case of any dispute, the decision of the Entrance Test Committee, RGU shall be final and binding.
9. The OMR Answer Sheet consists of two copies, the Original copy and the Student's copy.

1	Find the least number which when divided by 8, 12 and 16 leaves 3 as remainder in each case but when divided by 7 leaves no remainder.				d	147
	a) 84	b) 98	c) 126	d) 147		
2	If the rate of interest is 12.5 % p.a, how many years will be required to double an amount, in case of annual compound interest?				d	8
	a) 5	b) 6	c) 7	d) 8		
3	Find the missing term in the following question: DCE, HGI, MLN,				b	SRT
	a) KLT	b) SRT	c) MNO	d) HIJ		
4	If Shyam is the brother of Riya, Mohini is the brother of Anuj, Riya is the daughter of Ram. Anuj is the brother of Shyam, how is Mohini related to Ram?				c	Wife
	a) Sister	b) Daughter	c) Wife	d) Mother		
5	2, 9, 28, 65, 126, _____				c	217
	a) 137	b) 223	c) 217	d) 199		
6	Statement: Some actors are singers. All singers are dancers. Conclusions are: (i) Some actors are dancers, (ii) No singer is actor.				a	Only conclusion (i) follows.
	a) Only conclusion (i) follows	b) Only conclusion (ii) follows.	c) Either (i) or (ii) follows	d) Neither (i) nor (ii) follows		
7	Introducing to a man a woman said, "He is the only son of my mother's mother". How is the woman related to the man?				d	Maternal uncle
	a) Niece	b) Brother	c) Cousin	d) Maternal Uncle		
8	The difference of the squares of the two consecutive numbers is 21.					

	What are the numbers?					
	a) 10 and 11	b) 11 and 12	c) 12 and 13	d) 13 and 14	a	10 and 11
9	If average of three numbers is 13, what is the sum of these numbers?					
	a) 39	b) 37	c) 32	d) 31	a	39
10	In which state was the Buland Bharat Exercise conducted?					
	a) Tamil Nadu	b) Andhra Pradesh	c) Arunachal Pradesh	d) Rajasthan	c	Arunachal Pradesh
11	As per the 'Internet in India Report', what was the percentage of the Indian population who accessed the internet at least once in a month in 2022?					
	a) 22 %	b) 32 %	c) 42 %	d) 52 %	d	52 %
12	Which payment bank launched 'WhatsApp Banking Service'?					
	a) India Post Payments Bank	b) Airtel Payments Bank	c) Jio Payments Bank	d) NSDL Payments Bank	a	India Post Payments Bank
13	Which country has successfully launched the world's first cloud-built demonstration satellite 'JANUS-1'?					
	a) India	b) USA	c) Russia	d) China	a	India
14	Which country won the first ICC U19 Women's T20 World Cup in 2023?					
	a) England	b) South Africa	c) India	d) Australia	c	India

15	In which category the song “Naatu Naatu” won Oscar Award 2023?				a	Original Song
	a) Original Song	b) Original Score	c) Sound	d) Cinematography		
16	Which Union Ministry has implemented “Vibrant Villages Programme”?				a	Ministry of Home Affairs
	a) Ministry of Home Affairs	b) Ministry of External Affairs	c) Ministry of Housing and Urban Affairs	d) Ministry of Rural Development		
17	What is the antonym of ‘INVINCIBLE’?				d	Conquerable
	a) Powerful	b) Ancient	c) Invaluable	d) Conquerable		
18	Which of the following is correctly spelled word?				c	erroneously
	a) erroneously	b) erroneously	c) erroneously	d) erroneously		
19	The farmer is working _____ his field. (<i>Choose correct preposition</i>)				a	in
	a) in	b) at	c) on	d) over		
20	(i) He asked me to _____ over the fence. (ii) We should keep the valuables in the _____. (<i>Choose the word that fits at both the places in contest of each sentence</i>)				c	vault
	a) cross	b) safe	c) vault	d) tie		
21	Select the pair of words which has the same relationship as in ‘Fun : Celebration’.					

	a) Sorrow : Pain	b) Sad : Condemn	c) Woeful : Pleasant	d) Witty : Boring	b	Sad : Condemn
22	Entomology is a branch of science that studies _____ .				c	insects
	a) origin of earth	b) behavior of human beings	c) insects	d) reptiles		
23	Guru Gobind Singh was the _____ Sikh Guru.				d	tenth
	a) seventh	b) eighth	c) ninth	d) tenth		
24	In which of the following year, was World War II started?				b	1939
	a) 1929	b) 1939	c) 1949	d) 1959		
25	ISRO stands for _____.				a	Indian Space Research Organisation
	a) Indian Space Research Organisation	b) Indian Satellite Research Organisation	c) Indian Society for Rural Organisation	d) Indian Science and Research Organisation		
26	Strain is proportional to stress in elastic deformation" is known as:				b	Hooke's law
	a) Poisson's ratio	b) Hooke's law	c) Smith's law	d) None of these		
27	The line of maximum curvature in a fold is known as:				c	Hinge
	a) Crest	b) Axis	c) Hinge	d) Trough		
28	An anticline fold may be defined as a fold that:					

	a) convex upward.	b) Has older rocks in the core.	c) The two limbs dip away from each other.	d) All above definitions are correct.	d	All above definitions are correct.
29	Salt domes are the best examples of:				a	diapiric fold
	a) diapiric fold	b) reclined fold	c) periclinal fold	d) none of these		
30	Two sets of related folds whose axial surfaces are inclined towards one another are called:				c	Conjugate folds
	a) Parallel folds	b) Similar folds	c) Conjugate folds	d) Complex folds		
31	Horst and graben are features produced by ____.				a	normal faults
	a) normal faults	b) reverse faults	c) thrust faults	d) none of these		
32	Shale refers to a rock formed from:				c)	Clay sized materials
	a) Sand sized material	b) Plant remains	c) Clay sized materials	d) Carbonates		
33	Which one of the following features is NOT associated with sedimentary rocks?				d)	caldera
	a) bedding	b) foliation	c) fossils	d) caldera		
34	Which of the following types of sediments are most abundant?				b)	fine clastic
	a) coarse clastics	b) fine clastics	c) chemical	d) biochemical		

					cs	
35	The tendency for variations in current velocity to segregate sediments on the basis of particle size is called _____.				d)	sorti ng
	a) lithification	b) compaction	c) metamorphism	d) sorting		
36	Which of the following sandstone types is most likely to form by the mechanical and intense chemical weathering of granite?				a)	Quar tz areni te
	a) Quartz arenite	b) Litharenite	c) Arkose	d) Shale		
37	The structure most prevalent to sedimentary rocks are:				d)	lamin ation
	a) nodular structure	b) geode structure	c) concretionary structure	d) lamination		
38	Lamination is structure formed in which type of sedimentary rocks?				a)	Fine grain ed
	a) Fine grained	b) Medium grained	c) Coarse grained	d) Nothing in particular		
39	Graded bedding occurs due to which phenomenon?				c)	Gravi tatio nal settl ng
	a) Wind settling	b) Sunlight	c) Gravitational settling	d) Loading		
40	Which of the following <i>Ages</i> belongs to the Pleistocene <i>Epoch</i> ?				a	Chiba nian
	a) Chibanian	b) Northgrippian	c) Greenlandian	d) Meghalayan		
41	Which dating technique is best for dating volcanic rocks?				d	K-Ar datin g.
	a) Carbon dating.	b) OSL dating.	c) TL dating.	d) K-Ar dating.		

42	Which hypothesis proposes that climate changes have mainly been driven by CO ₂ input into the atmosphere and the ocean by plate tectonic processes?				b	BLAG spreading rate hypothesis.
	a) Milankovitch hypothesis.	b) BLAG spreading rate hypothesis.	c) Uplift-weathering hypothesis.	d) Polar position hypothesis.		
43	Which seismic waves cause most destruction?				d	Surface waves
	a) P-wave	b) S-wave	c) Body waves	d) Surface waves		
44	When seismic waves travel through weaker materials, they slow down and lose energy at a faster rate causing wave amplitude to increase. This phenomenon is known as _____. (fill in the blank)				c	ground amplification
	a) liquefaction	b) wave attenuation	c) ground amplification	d) tsunami		
45	Which statistical tool can best represent the relationship between grainsize and roundness of clasts in sedimentary rocks?				a	Correlation
	a) Correlation.	b) Standard deviation.	c) Regression.	d) trend analysis.		
46	Grain size distribution pattern of very well sorted sediments is _____. (fill in the blank)				a	Laptokurtic
	a) Laptokurtic	b) Mesokurtic	c) Platykurtic	d) None of these		
47	The _____ was an era dominated by the dinosaurs.				c	Mesozoic
	a) Precambrian	b) Palaeozoic	c) Mesozoic	d) Cenozoic		

48	Fossils of burrows and footprints are known as ____.				d	Trace fossil
	a)Pseudofossil	b)Croptolites	c) Body fossil	d) Trace fossil		
49	Which of the following is not a living fossil?				d	Nummilutes
	a) Lingula	b) Nukula	c) Nautilus	d) Nummilutes		
50	The most favourable environment for the preservation of fossil is ____.				d	marine
	a) terrestrial	b) lacustrine	c) fluvial	d) marine		
51	The first vertebrates appeared during ____.				b	Ordovician
	a)Cambrian	b) Ordovician	c) Silurian	d) Devonian		
52	The suture of the cephalopods in the nautiloids were ____.				a	Straight
	a) Straight	b) Freeled	c) Phylitic	d) Goniatitic		
53	Water vascular system is a common feature of ____.				a	Echinoids
	a) Echinoids	b) Bivalves	c) Gastropods	d) Cephalopods		
54	Which of the following is the widest river in India?				b	Brahmaputra
	a) Ganga	b) Brahmaputra	c) Sindhu	d) Yamuna		
55	Dongargarh granite occurs in ____.				c	Bastar Craton
	a)Dharwar Craton	b)Singhbhum Craton	c)Bastar Craton	d) Bundelkhand Craton		
56	Pulivendla Quartzite in Cuddapah Supergroup belongs to					

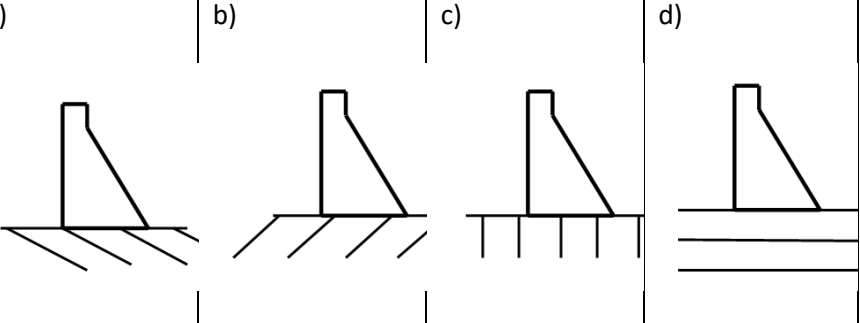
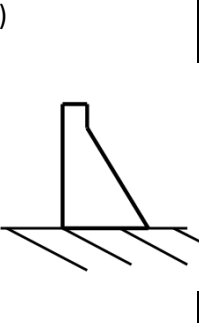
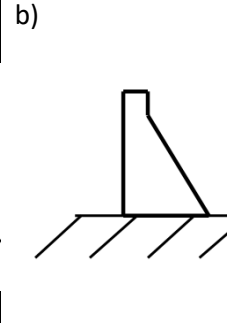
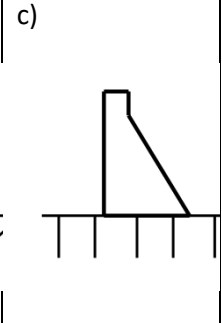
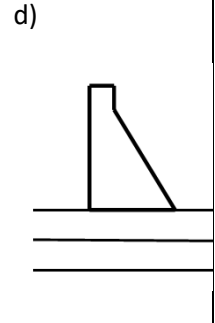
	a)Papaghni Group	b)Chitravati Group	c)Nallamalai Group	d)Banganapalle Group	b	Chitravati Group
57	The geological period, Ediacaran, belongs to ____.				b	Proterozoic
	a) Archaean	b) Proterozoic	c) Palaeozoic	d) Mesozoic		
58	Gondwana succession in India generally starts with ____.				d	glacial beds
	a) fluvial sediments	b) lacustrine sediments	c) marine sediments	d) glacial beds		
59	Which of the following sedimentary basin does not host Gondwana successions?				d	Cuddapah basin
	a) Koel-Damodar basin	b) Son-Mahanadi basin	c) Pranhita-Godavari basin	d) Cuddapah basin		
60	As per the recent classification schemes, age of the Umia series is ____.				d	Cretaceous
	a) Permian	b) Triassic	c) Jurassic	d) Cretaceous		
61	Cinder cones are commonly produced by ____.				c	pyroclastic deposit
	a) magma intrusion	b) lava flow	c) pyroclastic deposit	d) pillow lava		
62	Lopoliths have ____.				b	concave base
	a) flat base	b) concave base	c) convex base	d) convex top		
63	Granites are ____.				d	holocrystal
	a)holohyallic	b)mesocrystalline	c)mesohyallic	d) holocrystalline		

	ne					line
64	Ophitic texture in a kind of ____.				c	poikilitic texture
	a) equigranular texture	b) porphyritic texture	c) poikilitic texture	d) replacement texture		
65	Magma generation along divergent plate boundaries is caused by ____.				a	decompression melting
	a) decompression melting	b) addition of volatiles	c) increase in temperature	d) shearing		
66	Composition of first crystallizing plagioclase in the albite-anorthite binary system will always be ____.				a	Ca-enriched
	a) Ca-enriched	b) Na-enriched	c) same as initial magma	d) eutectic composition		
67	Stishovite is ____.				a	high pressure polymorph of silica
	a) high temperature polymorph of silica	b) high pressure polymorph of silica	c) low temperature polymorph of aluminosilicate	d) high pressure polymorph of aluminosilicate		
68	Hornfels generally form by ____.				b	contact metamorphism
	a) regional metamorphism	b) contact metamorphism	c) shock metamorphism	d) fault-zone metamorphism		
69	The seismic waves attain highest velocities in ____.				b	lower mantle
	a) upper	b) lower	c) outer core	d) inner core		

	mantle	mantle				le
70	The most important and drastic composition boundary within the earth lies at ____.				c	Gute nber g disco ntinu ity
	a) Conrad discontinuity	b) Mohorovicic discontinuity	c) Gutenberg discontinuity	d) Lehman discontinuity		
71	The time taken for light to reach the earth from the sun is ____.				a	499.7 20 secs
	a) 499.720 secs	b) 499.012 secs	c) 489.720 secs	d) 489.012 secs		
72	The "Nebular Hypothesis" was proposed by ____.				d	Kant and Lapla ce indep ende ntly
	a) Lord Kelvin	b) Newton	c) Kant and Laplace together	d) Kant and Laplace independently		
73	The difference between the equatorial and polar diameters of the earth is ____.				b	43 km
	a) 21 km	b) 43 km	c) 56 km	d) 28 km		
74	Which instrument is used to record earthquake waves?				a	Seis mogr aph
	a) Seismograph	b) Seismogram	c) Seismometer	d) Scintillometer		
75	The ozone layer in the Earth's atmosphere is confined to ____.				b	strat osph ere
	a) troposphere	b) stratosphere	c) mesosphere	d) thermosphere		

76	The branch of geology that deals with the form, classification, mechanism, and causes of these rock structures' evolution are known as ____.				b	Structural Geology
	a) Rock Geology	b) Structural Geology	c) Basic Geology	d) Lithology		
77	Which of the following has the capability of acquiring stereoscopic images?				a	Cartosat-1
	a) Cartosat-1	b) Resourcesat-1	c) Oceansat-1	d) Scatsat-1		
78	What is the spatial resolution of LISS-4 imagery?				c	5.8 m
	a) 1 m	b) 2.5 m	c) 5.8 m	d) 23.5 m		
79	The range resolution of RADAR image depends on which of the following?				b	Pulse length
	a) Wavelength	b) Pulse length	c) Antenna length	d) Beam width		
80	Which of the following is a multi-image manipulation?				d	Principal component analysis
	a) Contrast stretching	b) Spatial Filtering	c) Level slicing	d) Principal component analysis		
81	Satellite imagery represents which of the following types of data?				b	Raster data
	a) Vector data	b) Raster data	c) TIN data	d) Attribute data		
82	Which spatial operation is involved in extraction of drainage from digital elevation model (DEM)?				b	Neig
	a) Local	b)	c) Zonal	d) Overlay operation		

	operation	Neighbourhood operation	operation		hbou rhood oper ation
83	What is the minimum number of satellites required by a GPS receiver to locate a point in three-dimension?				
	a) Three	b) Four	c) Six	d) Ten	b Four
84	Which of the following is a non-renewable energy resource?				
	a) solar	b) wind	c) hydroelectric	d) coal	d coal
85	Energy resources derived from natural organic materials are called ____.				
	a) geothermal energy	b) fossil fuel	c) biomass	d) none of these	b fossil fuel
86	Which of the following structure is least likely to contain an oil trap?				
	a) structural dome	b) anticline	c) syncline	d) fault	c syncline
87	Which of the following energy sources does not produce carbon dioxide?				
	a) oil	b) uranium	c) coal	d) natural gas	b uranium
88	The common method for sampling of placer deposit is ____.				
	a) churn drilling	b) auger drilling	c) jet drilling	d) rotary drilling	a churn drilling
89	The natural gamma ray log exhibits a "high response" from _____.				
	a) shales	b) limestones	c) dolomite	d) coal	a shales
90	Magnetic materials with extremely high magnetic susceptibility are described as _____.				

	a) ferromagnetic	b) paramagnetic	c) diamagnetic	d) nonmagnetic	a	ferromagnetic
91	The Schlumberger configuration is used in _____.				a	electric profiling
	a) electric profiling	b) magnetic profiling	c) geomagnetic profiling	d) seismic profiling		
92	Which of the following is not one of the consistency limits of soil?				a	Elastic Limit
	a) Elastic Limit	b) Plastic Limit	c) Liquid Limit	d) Shrinkage Limit		
93	Bhakra dam in Punjab is an example of _____.				a	gravity dam
	a) gravity dam	b) buttress dam	c) arch dam	d) earth dam		
94	Which of the following is the ideal condition for dam construction?				b	
	a) 	b) 	c) 	d) 		
95	The topmost part of a tunnel is known as _____.				b	vault head
	a) invert	b) vault head	c) support	d) spring line		
96	Which of the following material is most porous?				a	Clay
	a) Clay	b) Gravel	c) Sandstone	d) Marble		
97	The quantity of water that a unit volume of aquifer drains by gravity is known as _____.				c	specific
	a) hydraulic	b) transmissivity	c) specific yield	d) specific		

	conductivity			retention		fic yield
98	Which of the following parameters is the difference in water content between plastic limit and liquid limit of soil?				d	Plasti city index
	a) Activity	b) Shrinkage index	c) liquidity index	d) Plasticity index		
99	Capillary fringe is located at the _____. (fill up the blank)				b	botto m part of zone of aerat ion
	a) top part of zone of aeration	b) bottom part of zone of aeration	c) top part of zone of saturation	d) bottom part of zone of saturation		
100	Diamond In kimberlite and corundum in nepheline syenite are good examples of ____ .				a	disse mina ted depo sit
	a) disseminated deposit	b) segregated deposit	c) injected deposit	d) pegmatitic deposit		

SPACE FOR ROUGH WORK