FEDERAL PUBLIC SERVICE COMMISSION



COMPETITIVE EXAMINATION FOR RECRUITMENT TO POSTS IN BS-17 UNDER THE FEDERAL GOVERNMENT, 2011

Roll Number

GEOLOGY, PAPER-I

TIME ALLOWEI	D: (PART-I MCQs)	30 MINU	FES		MAXIM		IARKS: 20
THREE HOURS	(PART-II)		& 30 MINU	TES			ARKS: 80
	t attempt PART-I (MC	Qs) on separa	te Answer Sh	eet which	shall be take	en bacl	k after 30
minu (iii) Orus		ant: anglange		ha airran a			
(ii) Ove	rwriting/cutting of the	options/answ	vers will not	be given c	crean.		
	<u>(PAR</u>	T-I MCQs) (COMPULSC	DRY)			
Q.1. Select the be	est option/answer and fi	ll in the appro	o priate box o	on the Ans	wer Sheet.	(1	l x 20=20)
(i) Following are	the members of plagioc	clase family:					
(a) Albite, C	ligoclase, Andesine	(b)	Andesine, La	abradorite,	, Bytownite		
(c) Oligoclas	se, Andesine, Labradori	te (d)	Labradorite,	Bytownite	e, Anorthite	(e)	All of these
(ii) Chaman Trans	sform Zone is characteri	ized:					
(a) Mainly b	y strike-slip faulting wi	th minor subd	uction				
(b) Mainly b	y dip-slip faulting with	minor subduc	tion				
(c) Mainly b	y subduction with mino	r strike-slip fa	ulting				
(d) Mainly b	y obduction with minor	strike-slip fau	ulting			(e)	None of these
(iii) A blocky and	fragmented form of lava	a occurring in	flows with fis	ssured and	l angular surf	faces i	s known as:
(a) Ad lava	(b) Ac lava	(c)	Ab lava	(d)	Aa lava	(e)	None of these
(iv) The following	formations are known	respectively as	s Upper, Mide	dle and Lo	ower Product	us Lin	nestone:
(a) Amb, Wa	argal and Chiddru	(b)	Chiddru, Wa	rgal and A	Amb		
(c) Wargal,	Amb and Chiddru	(d)	Amb, Chiddr	ru and Wa	rgal	(e)	None of these
(v) The following	mineral shows two sets	s rhombic clea	vage:				
(a) Hornbler	nde (b) Grunerite	(c)	Tremolite	(d)	Actinolite	(e)	All of these
(vi) Physical weat	hering process in which	sheets of rock	x are fractured	and deta	ched from an	outcr	op is termed as
(a) Degenera	ation (b) Transpirat	ion (c)	Exfoliation	(d) De	eformation	(e)	None of these
(vii) Mohorovicic l	Discontinuity is the bound	ndary betweer	1:				
(a) Crust and	l Lithosphere	(b)	Sima and Sia	ıl			
(c) Crust and	l Mantle	(d)	Crust and As	thenosphe	ere	(e)	None of these
(viii) Type of foliati	on associated with very	fine grained	pelitic rocks r	netamorpl	hosed to low	grade	is known as:
(a) Phyllitic	Structure	(b)	Gneissic Stru	icture			
(c) Schistose	e Structure	(d)	Slaty Cleava	ge		(e)	None of these
(ix) Which of the	following statements is	true?					
(a) Apatite is	s harder than Fluorite	(b)	Quartz is har	der than C	Calcite		
(c) Corundu	m is harder than Quartz	(d)	Diamond is h	harder that	n all minerals	s (e)) All of these
(x) Among follow	ving which are classed a	s chronostrati	graphic units:				
· · ·	od, Epoch		Group, Form		mber		
	Series, Stage		Palaeozoic, C			(e)]	None of these
-	following group of rock						
	te, Syenite, Rhyolite		Granite, Dior		odiorite		
(c) Trachyte	, Andesite, Dacite	(d)	Gabbro, Nori	ite, Doleri	te (e	e) No	one of these

GEOLOGY, PAPER-I

 (xiii) Island Arc is a linear or arcuate chain of volcanic islands at: (a) Transform Plate Boundary (b) Convergent Plate Boundary (c) Mid-Oceanic Ridge (d) Divergent Plate Boundary (e) None c (xiv) Axial Fold Belt is the dividing feature between two basins. (a) Indus and Kakar Khurasan (b) Lower and Upper Indus (c) Southern and Central Indus (d) Indus and Balochistan (e) None c (xv) Current ripples are used to indicate: (a) Velocity of flow (b) Direction of flow (c) Line of flow (d) Gradient of flow (e) All of flox (ii) Benthos (b) Nektons (c) Zooplanktons (d) Phytoplanktons (e) None c (xvii) Floating invertebrates are known as: (a) Benthos (b) Nektons (c) Zooplanktons (d) Phytoplanktons (e) None c (xviii) Zalucch Nala is situated in: (a) Eastern Salt Range (b) Western Salt Range (c) Surghar Range (d) Central Salt Range (e) None c (xiii) Expression of the septum on the wall surface of Ammonoids is known as: (a) Growth lines (b) Suture (c) Ribs (d) Umbilicus (e) None c (xiii) Blue Schist is comprised of: (a) Smectite and Quartz (b) Glaucophane, Lawsonite and Quartz (c) Epidote and Albite (d) Marble and Quartzite (e) None C (xiii) Attempt ONLY FOUR questions from PART-II. All questions carry EQUAL markfilii) Extra attempt of any question or any part of the attempted question will not be considered. (a) Curvilinear (b) Rectilinear (c) Horizontal (d) Vertical features of c Trilobita of Phylum Arthropoda. (b) Attempt ONLY FOUR questions from	UL		\mathcal{O}	/1\-1										
(c) Plutonic rocks (d) Volcanic rocks (e) All of 1 (xiii) Island Are is a linear or arcuate chain of volcanic islands at: (a) Transform Plate Boundary (b) Convergent Plate Boundary (c) Mid-Oceanic Ridge (d) Divergent Plate Boundary (e) Mid-Oceanic Ridge (f) Divergent Plate Boundary (e) None of (xiv) Axial Fold Belt is the dividing feature between two basins. (a) Indus and Kakar Khurasan (b) Lower and Upper Indus (c) Southern and Central Indus (d) Indus and Balochistan (e) None of (xv) Current ripples are used to indicate: (a) Velocity of flow (b) Direction of flow (c) Line of flow (c) All of 1 (xvi) Floating invertebrates are known as: (a) Benthos (b) Nektons (c) Zooplanktons (d) Central Salt Range (e) None of (xvii) Zaluch Nala is situated in: (a) Eastern Salt Range (d) Central Salt Range (e) None of (xvii) Zaluch Nala is situated in: (a) Growth lines (b) Suture (c) Ribs (d) Umbilicus (e) None of (xii) Blue Schist is comprised of: (a) Growth lines (b) Rectilinear (c) Horizontal (d) Vertical (e) None of (xii) Blue Schist is comprised of: (a) Curvilinear (b) Rectilinear (c) Horizontal (d) Vertical	(xii)	Anti	stress and stre	ss mine	rals are discu	ussed i	n the	context of:						
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 kviii) Expression of the septum on the wall surface of Ammonoids is known as: (a) Growth lines (b) Suture (c) Ribs (d) Umbilicus (e) None (xix) Blue Schist is comprised of: (a) Smectite and Quartz (b) Glaucophane, Lawsonite and Quartz (c) Epidote and Albite (d) Marble and Quartzite (e) None (xx) The hinge line of a doubly plunging syncline is: (a) Curvilinear (b) Rectilinear (c) Horizontal (d) Vertical (e) None (xx) The hinge line of a doubly plunging syncline is: (a) Curvilinear (b) Rectilinear (c) Horizontal (d) Vertical (e) None (ii) PART-II is to be attempted on separate Answer Book. (iii) Attempt ONLY FOUR questions from PART-II. All questions carry EQUAL mark (iii) Extra attempt of any question or any part of the attempted question will not be considered. Q.2. Define fossil, discuss various modes of fossilizations. Describe main morphological features of c Trilobita of Phylum Arthropoda. Q.3. What are faults, how they are recognized in field? Give the classification of faults based on Slip types. Q.4. Describe the morphological and structural characters of Salt Range. Discuss its importance in geology of Pakistan. Give the lithological characteristics of Salt Range Formation. Q.5. In the context of earthquake, define epicentre and focus. Using P and S waves how the epicentre of an earthquake is located? Q.6. How rock-forming minerals are classified on the basis of silicate structure?		(c)		-			(d)	Central Salt Range					Non	e of these
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•	Q.5.						re and	l focus. Usi	ing P a	nd S w	aves how	the		(20)
Give example of each class. Write down the physical properties of mica group.	Q.6.			-										(20)

Q.7. With examples, discuss the geological parameters which control the landforms of an area. Describe the landforms resulted by sedimentation through ice and meltwater. (20)

Q.8.Write notes on the following:
(a)(b)Diagenesis(c)Dolomitization(d)Metasomatism

(5+5+5+5=20)

FEDERAL PUBLIC SERVICE COMMISSION



COMPETITIVE EXAMINATION FOR RECRUITMENT TO POSTS IN BS-17 UNDER THE FEDERAL GOVERNMENT, 2011

Roll Number

GEOLOGY, PAPER-II

					30 MIN					MARKS: 20
	кее н ГЕ: (i)		Ň	/		RS & 30 MINU rate Answer S				MARKS: 80
	IL . (I)	minute	-		Q 5) on sepa					ex unter 50
(ii) Overwriting/cutting of the options/answers will not be given credit.										
(PART-I MCQs) (COMPULSORY)										
Q.1.	Sel	ect the best	option/a	nswer and fil	l in the app	propriate box	on the A	nswer Sheet.		(1 x 20=20)
(i)	The q	uality of co	al of Th	ar coal depos	its is:					
	(a)	Anthraciti	c (b)	Bituminous	(c)	Lignitic	(d) 5	Sub-bituminou	is (e	e) All of these
(ii)	Liptir	ite type of	maceral	group, after 1	naturation i	is capable to ge	enerate:			
	(a)	Condensat	e (b)	Oil	(c)	Gas	(d)	Coal	(e)	None of these
(iii)	Dolor	nite deposit	ts of Jha	mpir (Sindh)	occur in:					
	(a)	Laki Form	ation		(b)	Nari Formati	on			
	(c)	Dungan Fo	ormation	L	(d)	Kirthar Form	nation		(6	e) All of these
(iv)	The h	eavy miner	als, Zirc	on, Rutile and	d Apatite ar	e found in:				
	(a)	Sand and S	Sandston	e	(b)	Chalk and Li	mestone			
	(c)	Kaolinite a	and Clay	stone	(d)	Chlorite and	Claystor	ne	(e)	None of these
(v)	Durin	g geologica	al mappi	ng the follow	ing can be	used as base m	ap:			
	(a)	Toposheet			(b)	Aerial Photo	graph			
	(c)	Satellite In	nage		(d)	Habitation m	ap (e)	All of these	e	
(vi)	Hemi	morphite, F	Franklini	te and Smiths	sonite are of	res of:				
	(a)	Cu	(b)	Ti	(c)	Cr	(d)	Zn	(e)	None of these
(vii)	Follo	wing is a ve	ry well	proven reserv	oir rock in	Lower Indus E	Basin:			
	(a)	Gaj Forma	tion	(b) Nari Fo	ormation	(c) Goru Fo	rmation			
	(d)	Parh Lime	stone		(e)	None of thes	e			
(viii)	F. H.	Lahee and	R. R. Co	mpton are the	e authors of	the famous bo	ooks on t	he subject:		
	(a)	Geomorph	ology		(b)	Field Geolog	У			
	(c)	Stuctural C	Geology		(d)	Engineering	Geology		(e)	None of these
(ix)	Khas	Kheli oil fi	eld in lo	wer Sindh wa	s discovere	ed in:				
	(a)	1991	(b)	1981	(c)	1971	(d)	1961	(e)	None of these
(x)	Warsa	ak dam is b	uilt on:							
	(a)	Kabul Riv	er (b)	Kurram Riv	ver (c)	Gomal River	· (d)	Swat River	(e)	None of these
(xi)	Alpin			posits occur a						
. /	(a)	Chagai	-	Kohistan	(c)	Raskoh	(d)	Muslimbagh	(e)	All of these
(xii)		-	. ,			ost suitable for		e	• • •	e and
	(a)	Air-born n	nagnetic	survey	(b)	Ground mag	netic sur	vey		
	(c)	Seismic m	ethod		(d)	Electrical Re	sistivity	method	(e)	All of these

GEOLOGY, PAPER-II

(xiii)	To ob	tain informatio	n abo	ut magnetic	miner	als fro	om Stereogram/St	ereopa	ir following	instr	ument is used:
	(a)	Stereometer	(b)	Magneton	neter	(c)	Resistivitymeter				
	(d)	Seismometer	(e)	None of the	nese						
(xiv)	Follow	wing rocks are	not su	itable as con	nstruct	tion m	aterials due to AS	SR and	ACR hazard	ls res	pectively:
	(a)	Granite and D	iorite		(b)	Do	lomite and Calcit	e			
	(c)	Andesite and I	Dolon	nite	(d)	Ba	salt and Gabbro	(e)	None of the	ese	
(xv)	(xv) Presence of Pegmatite is especially an indicator of possible occurrence of:										
	(a)	Base-metals				(b) Radioactive	minera	ıls		
	(c)	Magnetic min	erals			(d) Non-metals			(e)	All of these
(xvi)	For ex	ploration and o	detern	nination of u	nderg	round	water quality mo	ost suita	able method i	is:	
	(a)	Seismic	(b)	Magnetic		(c)	Geochemical	(d)	Resistivity	(e)	None of these
(xvii)	If a m	ap shows distri	butio	n of rocks ar	nd oth	er geo	logical materials	(featur	es also) of di	ffere	ent ages over the
	Earth'	s surface or be	low, i	t is known a	s:						
	(a)	Topographic N	Мар			(b)	Geological Map				
	(c)	Physiographic	Map			(d)	Mine-Survey M	ap	(e	e) 1	None of these
(xviii)	-	which shows ned as:	the su	irface conto	urs on	an im	aginary surface to	o whic	h water woul	d rise	e in a drilled well
	(a)	Piezometric C	ontou	r Map		(b)	Groundwater Co	ontour	Map		
	(c)	Water Table C	Contou	ır Map		(d)	Sonometric Con	tour M	lap (e	e) A	All of these
(xix)	Follow	ving is the tern	n desc	ribes the Iro	n-Oxi	de ric	n zone which lies	above	a Sulphide b	earir	ng ore deposit:
	(a)	Greisen	(b)	Genesis		(c)	Gossan	(d)	Gneiss	(e)	None of these
(xx)	Oil se	epages in the S	ulaim	an Range ar	e fron	n the r	ocks of the follow	ving ag	ges:		
	(a)	Triassic and Ju	urassio	c		(b)	Jurassic and Cretaceous				
	(c)	Cretaceous an	d Pale	eocene		(d)	Paleocene and E	Eocene	(e	e) A	All of these

PART-II

NOTE:(i)	PART-II is to be attempted on separate Answer Book.
(ii)	Attempt ONLY FOUR questions from PART-II. All questions carry EQUAL marks.
(iii)	Extra attempt of any question or any part of the attempted question will not be
	considered.

Q.2. Name various geochemical prospecting methods for minerals. Describe any one of them in detail (20) with examples.

Q.3.	What geological considerations are essential before selecting a site for and during construction of a tunnel? Discuss in detail.	(20)
Q.4.	Elaborate Hydrologic Cycle. How the water-flow budget of an hydrologic basin is calculated?	(20)

- **Q.5.** What are Kimberlites? Discuss their distribution in space and time, geological setting and petrography. (20)
- Q.6. (a) Give the criteria for lithological interpretation on an aerial photograph. (10)
 - (b) Briefly discuss the merits and demerits of Aerial Photography and Satellite Remote (10) Sensing over each other.
- **Q.7.** Write about the tectonic setting and metallogenic province of RecoDiK Copper Gold Belt of Balochistan. Discuss the genesis and petrography of the deposit. (20)
- **Q.8.** Give the occurrence of coal deposits in the Kirthar Province of Lower Indus Basin. Describe (20) their stratigraphic association, coal varieties and reserves.
