SET-"Z"

(DO NOT OPEN THIS QUESTION BOOKLET BEFORE TIME OR UNTIL YOU ARE ASKED TO DO SO)

(Ph.D/URS-EE - JAN. 2022)

10129

Code



ENVIRONMENTAL SCIENCE

Sr. No.

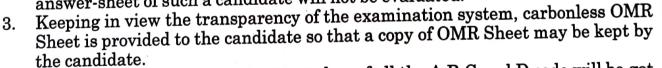
Time: 1 ¹ / ₄ Hours	Total Questi	ons:100	Max. Marks : 100
Roll No	(in figure)		(in words)
Name :		Father's Name :	
Mother's Name :		Date of Examina	tion :

(Signature of the candidate)

(Signature of the Invigilator)

CANDIDATES MUST READ THE FOLLOWING INFORMATION/ INSTRUCTIONS BEFORE STARTING THE QUESTION PAPER.

- All questions are compulsory. 1.
- The candidates must return the Question book-let as well as OMR 2. answer-sheet to the Invigilator concerned before leaving the Examination Hall, failing which a case of use of unfair-means / mis-behaviour will be registered against him / her, in addition to lodging of an FIR with the police. Further the answer-sheet of such a candidate will not be evaluated.



- Question Booklet along with answer key of all the A,B,C and D code will be got 4. uploaded on the university website after the conduct of Entrance Examination. In case there is any discrepancy in the Question Booklet/Answer Key, the same may be brought to the notice of the Controller of Examinations in writing/through E-Mail within 24 hours of uploading the same on the University Website. Thereafter, no complaint in any case, will be considered.
- The candidate MUST NOT do any rough work or writing in the OMR Answer-5. Sheet. Rough work, if any, may be done in the question book-let itself. Answers MUST NOT be ticked in the Question book-let.
- There will be no negative marking. Each correct answer will be awarded 6. one full mark. Cutting, erasing, overwriting and more than one answer in OMR Answer-Sheet will be treated as incorrect answer.
- Use only Black or Blue BALL POINT PEN of good quality in the OMR Answer-7. Sheet.
- BEFORE ANSWERING THE QUESTIONS, THE CANDIDATES SHOULD 8. ENSURE THAT THEY HAVE BEEN SUPPLIED CORRECT AND COMPLETE BOOK-LET. COMPLAINTS, IF ANY, REGARDING MISPRINTING ETC. WILL NOT BE ENTERTAINED 30 MINUTES AFTER STARTING OF THE EXAMINATION.



Question No.	n		Qu	lestions	
1.	Which of the foillowing is not present in soluble state in alkaline soils?				
	(1)	Potassium	(2)	Calcium	
	(3)	Nitrates	(4)	Phosphorous	
2.	Wh	ich of the followin	g artificial chr	comosome has largest carrying capa	city
	(1)	BAC	(2)	YAC	
¢	(3)	PAC	(4)	MAC	
3.	Whi	ich is the correct	sequence for i	mpact assessment process in EIA	?
	 Prediction of impacts → Identification of impacts → Description of environment → Evaluation of impacts → Identification of mitigation needs. Identification of impacts → Prediction of impacts → Evaluation of impacts → Identification of mitigation needs. 				
	(2)	Identification of	-	_	
	(3)	Identification of impacts \rightarrow Iden Identification of	tification of minimpacts \rightarrow Definition	_	n c
	(3) (4)	Identification of impacts \rightarrow Iden Identification of of impacts \rightarrow E needs. Description of en	tification of minimpacts \rightarrow Dependent Dependent \rightarrow Dependent De	itigation needs. escription of environment \rightarrow Predict	n c tion
	(3) (4)	Identification of impacts \rightarrow Iden Identification of of impacts \rightarrow E needs. Description of en of impacts \rightarrow Ev needs.	tification of minimpacts \rightarrow Development \rightarrow Development \rightarrow valuation of invaluation of invalu	itigation needs. escription of environment \rightarrow Predict mpacts \rightarrow Identification of mitigat Identification of impacts \rightarrow Predict	n o tion tion
4. '	(3) (4) The r	Identification of impacts \rightarrow Iden Identification of of impacts \rightarrow E needs. Description of en of impacts \rightarrow Ev needs.	tification of minimpacts \rightarrow Derivaluation of in valuation of in vironment \rightarrow valuation of in used method fo	itigation needs. escription of environment \rightarrow Predict mpacts \rightarrow Identification of mitigat Identification of impacts \rightarrow Predict mpacts \rightarrow Identification of mitigat	n o tior tior

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Question No.	Questions		
5.	Which of the following pertains to "high-waste approach" in dealing wit the solid and hazardous wastes ?		
	(1) Composting (2) Recycling		
	(3) Burying and burning (4) Reusing		
6.	In most of the studies, a large sample size is anticipated to		
	(1) Maximize the sampling error		
	(2) Get a low level of precision		
	(3) Maximize the standard deviation		
	(4) Get a high level of precision.		
7.	The geometric mean of 4, 8 and 16 is		
	(1) 9.1 (2) 4.6		
	(3) 8.0 (4) 10.2		
8.	Copper (Cu) is classified according to its geochemical affinity as :		
	(1) Chalcophile element		
	(2) Siderophile element		
	(3) Atmophile element		
24.38 ju	(4) Lithophile element		
9.	Which of the following is used in manufacturing flexible plastic bags and		
	sheets ?		
nde Koger an se	(1) Polyethylene terephthalate		
	(2) Polystyrene		
	(3) TEFLON		
	(4) Low density polyethylene		
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Question No.		Questions	
10.	Which one of the following is a non-formal environment education and		
	awareness programme ?		
	(1) Environmental appre	ciation courses	
	(2) Environmental Education	ation in school system	
	(3) National Environmen	t Awareness Campaign	
	(4) Environmental Mana	gement Business Studies	
11.	Which of the following is not a method for <i>ex-situ</i> conservation of		
	biodiversity?		
	(1) In vitro repositories	(2) Cryobanks	
	(3) Botanical gardens	(4) National parks	
12.	The Protection of Plant va	rieties and Farmers Rights Act was passed by	
	the Indian Parliament in		
	(1) 1991	(2) 2001	
	(3) 2014	(4) 2002	
		D level waste water is permitted to be released	
	inlands by industries und	er Water (Prevention and Control of Pollution)	
	Act, 1974?		
	(1) 80 mg/l	(2) 30 mg/l	
	(3) 150 mg/l	(4) 100 mg/l	
14.	Which of the following is a scorable marker ?		
	(1) nptII	(2) hptIV	
	(3) bar	(4) gus	

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Question No.	Questions
15.	National Land Reform Policy stresses on
	(1) Tenancy reforms
	(2) Natural regeneration
х	(3) Restoration of ecological balance
	(4) Watershed approach
16.	Which is not true about the idea carrier matrix for enzyme immobilization
	(1) Low cost
	(2) Regenerability
	(3) Stability
	(4) Reduction in enzyme specificity
	In which years, the Ramsar Convention on Wetlands was held and con
	into force ?
	(1) 1965, 1969
	(2) 1961, 1965
	(3) 1971, 1975
	(4) 1981, 1985
18.	The Stockholm Convention is a global treaty to protect humans from
	(1) Toxic gases
	(2) Hospital acquired infections
	(3) Persistent organic pollutants
	4) Carbon monoxide
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Question No.			Que	estions
19.	Which of the following is not a restriction endonuclease ?			
	(1)	DNA ligase	(2)	Bam H1
	(3)	Eco R1	(4)	Hind III
20.	1	ch of the following is the r ociated adverse impact ?	right	match concerning the toxic metal and
	(1)	Zn-Brain tissue damage	(2)	Ni-Keratosis
	(3)	Ar-Renal poisoning	(4)	Hg-Pulmonary disease
21.		ount of 8-hydroxyquinoline of 5 ppm solution is :	(M.)	W. 145.16) required for preparing 1000
	(1)	$1.45\mathrm{mg}$	(2)	5 mg
	(3)	7.25 mg	(4)	14.5 mg
22.	Long term stability of a community depends on ;			y depends on ;
	(1)	Biodiversity	(2)	Resource partitioning
	(3)	Biotic component	(4)	Succession
23.	The	external appearance of the	e con	nmunity which may be described on the
		is of dominant plants, den	sity	height, colour etc. of plants is known
	as:	Periodicity	(2)	Phenology
	(1)	Physiognomy	(4)	Aspection
24.	IUC	CN headquarters is at :		
	(1)	Paris, France	(2)	Vienna, Austria
	(3)	Morges, Switzerland	(4)	New York, USA
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Question No.	Questions
25.	As compared to CO_2 , methane has global warming potential of :
	(1) 5-10 times more (2) 20-25 times more
	(3) 40-45 times more (4) 60-65 times more
26.	Laterite soil contains more of
	(1) Manganese and Silicate
	(2) Magnesium and Boron
•	(3) Iron and Aluminium
	(4) Potassium and Lead
27.	Universally accepted method for isolating semivolatile organic compound
	from their matrices is
	(1) Solvent extraction (2) Double infiltration
	(3) Sedimentation technique (4) Permeation
28.	The kind of association where both the population are benefitted, but no essential for the survival of either population is referred to as :
	(1) Competition (2) Exploitation
	3) Amensalism (4) Protocooperation
29.	Species diversity increases as one proceeds from
	1) Higher to lower altitude and lower to higher latitude
	2) Lower to higher altitude and higher to lower latitude
(3	3) Lower to higher altitude and lower to higher latitude
(4	
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(6)

Question No.	Questions				
30.	Which of the following ecosystems has the lowest net primary production				
	per square metere ?				
	(1) A grassland (2) An open ocean				
	(3) A Coral reef (4) A tropical rain forest				
31.	Brown forest soil is also known as				
	(1) Mollisols (2) Altisols				
	(3) Spodosols (4) Entisols				
32.	Establishment of a species in a new area is referred to as				
	(1) Ecesis (2) Aggregation				
	(3) Stabilization (4) Migration				
33.	The Zooplankton of continental shelf is generally the same as in				
	(1) Estuary region (2) Pelagic region				
	(3) Neritic region (4) Benthic region				
34.	'Mesothelioma' is caused by toxicity of				
	(1) Mercury (2) Lead				
	(3) Arsenic (4) Carbon monoxide				
35.	A volcanic eruption will be violent if there is				
	(1) High silica and high volatiles				
	(2) High silica and low volatiles				
	(3) Low silica and low volatiles				
	(4) Low silica and high volatiles				
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Question No.	Questions				
36.	Clay minerals are				
	(1) Tectosilicates (2) Sorosilicates				
•	(3) Inosilicates (4) Phyllosilicates				
37.	In biogeochemical cycle, a chemical element or molecule moves through				
	(1) Biosphere and lithosphere				
	(2) Biosphere, lithosphere and atmosphere				
	(3) Lithosphere and atmosphere				
	(4) Biosphere, lithosphere, atmosphere and hydrosphere				
38.	Biogas produced by anaerobic bacterial activity is a mixture of				
	(1) CH_3OH , CO_2 , NH_3 and H_2O^{-1}				
	(2) CO_2 , SO_2 , NO_2 , CH_4 and H_2O				
	(3) H_2S , CO_2 , CO , CH_4 and LPG				
	(4) CH_4 , CO_2 , NH_3 , H_2S and H_2O_2				
39.	Which of the following statements about the oxidative decarboxylation of pyruvate is correct ?				
	 The oxidative decarboxylation of pyruvate forms acetyl-CoA which i fed into the citric acid cycle 				
	(2) The oxidative decarboxylation of pyruvate formed in aerobic glycolysi occurs in the cytosol				
	(3) The oxidative decarboxylation of pyruvate is catalysed by the enzym pyruvate decarboxylase				
	(4) The oxidative decarboxylation of pyruvate is reversible since there i				
	a large decrease of free energy in the reaction				

Question No.	Questions				
40.	Function of Release factor RF2(Prokaryotes)/eRF1 (Eukaryotes) during				
	translation is to :				
	(1) UAA/UGA recognition				
	(2) Ribosome translocation				
	(3) GDP-Exchanging				
	(4) GTP-Binding				
41.	The rate of variation of population (N) with time (t) represented by equation				
	$dN/dt = \gamma N$, follows				
	(1) J-shaped curve (2) S-shaped curve				
	(3) Z-shaped curve (4) Parabolic curve				
42.	The soil type which is good for agriculture is				
	(1) Podozols (2) Latosols				
	(3) Serpent Soil (4) Solonachak				
43.	Restoration of genetic diversity of a population can be obtained by :				
201	(1) Sexual selection				
	(2) Mutation				
	(3) Genetic drift				
	(4) Stabilising selection				
	As per Indian Standards (BIS) for drinking water desirable limit for tot				
	-				
	hardness as $CaCO_3$ is (1) 100 mg/l (2) 200 mg/l				
(
	(3) 300 mg/l (4) 400 mg/l				

The smokestack plumes exhibit 'coning' behaviour when (1) Stable atmospheric conditions exist
(1) Stable atmospheric conditions exist
(2) Atmosphere is unstable
(3) The height of the stack is below the inversion layer
(4) Inversion exists right from the ground surface above
Among total dissolved matter in marine water, chlorine accounts for
(1) 30% (2) 55%
(3) 12% (4) 6%
Peroxyacetyl Nitrate (PAN) is formed by oxidation of
(i) Hydrocarbons (ii) Isoprene
(iii) Terpene (iv) Arsenic
Choose the correct answer from the codes :
(1) (i) and (iv)
(2) (ii) and (iv)
(3) (iii) and (iv)
(4) (i), (ii) and (iii)
The evolution of genetic resistance to antibiotics among disease-carryi
pacteria is an example of
(1) Stabilizing natural selection
2) Directional natural selection
3) Diversifying natural selection
4) Convergent natural selection

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Question No.	Questions		
49.	Beer's Law is applicable in case of :		
	(1) Heat transfer		
	(2) Convection studies		
	(3) Transmission of light		
	(4) Photochemical reaction		
50.	Anemometer is used to measure		
	(1) Atmospheric pressure (2) Wind speed		
	(3) Atmospheric temperature (4) Wind velocity		
51.	Most abundant fossil is :		
	(1) Coal (2) Natural gas		
	(3) Oil (4) Peat		
52.	Chaparral, Maquis, Encinous, Melleseab are important areas of		
	(1) Tropical deciduous woodland		
	(2) Temperate evergreen woodland		
÷	(3) Tropical evergreen woodland		
	(4) Temperate deciduous woodland		
53.	Which of the following food chain is correct?		
	(1) Phytoplankton \rightarrow Zooplankton \rightarrow Turtle \rightarrow Crabs		
	(2) Phytoplankton \rightarrow Zooplankton \rightarrow Crab \rightarrow Turtle		
	(3) Turtle \rightarrow Crab \rightarrow Zooplankton \rightarrow Phytoplankton		
	(4) Zooplankton \rightarrow Turtle \rightarrow Crab \rightarrow Phytoplankton		
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Question No.	Questions
54.	Two species cannot remain in same place according to
	(1) Allen's law (2) Gause hypothesis
	(3) Doll's rule (4) Weismann's theory
55.	Identify the correct pair :
	(1) Edaphic - Saline soil
	(2) Ecotope-Transition between two ecosystems
	(3) Heliophytes- Photophilic plants
	(4) Ecotone-Particular type of soil
56.	Freshwater ecosystems are nutritionally limited by
	(1) Phosphorous and Iron
	(2) Phosphorous and Carbon
	(3) Iron and Nitrogen
	(4) Nitrogen and Calcium
57.	'Threshold of Security' refers to the population level at which
	(1) The balance between parasite and host is disturbed as the ho produces antibodies.
	(2) Functional response of the predator is very high.
	(3) Predators no longer find it profitable to hunt for the prey species.
	(4) Parasites damage the host body but do not cause immediate mortali

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Question No.	Questions				
58.	Which of following statements is incorrect about the enzyme complex which synthesizes ATP during oxidative phosphorylation ?				
•	(1) Its activity is not affected by un-coupler				
	(2) It contains a protein channel				
•	(3) It is inhibited by oligomycin				
	(4) It binds to molecular oxygen				
59.	"Bermuda grass allergy" is a type of				
	(1) Contact allergy (2) Airborne allergy				
	(3) Hydroborne allergy (4) Soilborne allergy				
60.	Which of following blotting techinque is considered more convenient, when no restriction sites are needed to be studied ?				
• •	(1) Northern blotting (2) Dot blot				
	(3) Western blotting (4) Southern blotting				
61.	Pleistocene represents period of				
	(1) Cold climate				
	(2) Warm climate				
	(3) Alteration of cold and warm climate with high proportion of cold period				
	(4) Alteration of cold and warm climate with very high proportion of warm				

Question No.	Questions					
62.	Which of the following is a function of M cyclins (product of cdc 13 gene)					
	during cell cycle ?					
	(1) Activate Cdk1 for S phase (2) Activate Cdk1 for M phase					
	(3) Phosphorylation of Cdk (4) Converts M form of Cdk1 to S form					
63.	Which of the following monomer did not make up DNA?					
	(1) Deoxythymidylic acid					
	(2) Deoxyguanylic acid					
	(3) Deoxyuridylic acid					
	(4) Deoxycytidine acid					
64.	Bio-oil can be obtained from lignocellulose by					
	(1) Combustion (2) Fast pyrolysis					
	(3) Gasification (4) Transesterification					
65.	During DNA replication, OKazaki fragments are formed on :					
	(1) Unopened strands (2) Leading strand					
	(3) Unopened proteins (4) Lagging strand					
66. 7	The validity period of Environmental Clearance after Environmental Impa					
	Assessment is least for					
(1) Mining projects					
	2) River valley projects					
	3) Harbour projects					
	1) Area development projects					

uestion No.		•	Que	stions		
67.	Which statement is not correct for hazardous wastes ?					
940 [*] 19	(1) Th	ley contain one o	or more of 3) toxic compo	unds	
	(2) Th	ey catch fire eas	aily	4. ••••		
	(3) Th	ney are nonreact	ive and stab	le		
19	(4) Th	ney are capable o	of corroding	metal contair	ners	
68.	Right t	o clean environn	nent is guar	anteed in Ind	ian Constit	ution by
	(1) Aı	rticle 14	(2)	Article 19		
	(3) Aı	rticle 21	(4)	Article 25		•
69.	National Ambient Air Quality Standards for major pollutants were notified					
	by CPC					
	(1) 19	94	(2)	1984		•
	(3) 20	04	(4)	1974		
70.	Public	Liability Insura	nce Act cam	e into exister	nce in the y	ear:
	(1) 19	86	(2)	1989	· · ·	
	4	991	(4)	1995		
71.	Which one of the following DNA markers can be used to distinguish betwee					
	a homo	ozygote and het	erozygote ?			
		APD		AFLP	• 2	· · · · ·
	(3) R	FLP E–2022 (Envir		ISSR		3 • • • • •

Question No.	Questions				
72.	In Y-shaped energy flow model, one arm represents herbivore and the other				
	(1) Carnivore (2) Decomposer				
	(3) Omnivore (4) Secondary consumer				
73.	Which of the following is not present in acid rain ?				
	(1) Peroxyacetylnitrate (2) H_2CO_3				
	(3) HNO_3 (4) H_2SO_4				
74.	Which one of the following is not true about characteristics of chi-squar distribution ?				
	(1) Chi-square curve value is always positively skewed				
	(2) Chi-square value decreases with the increase in degree of freedom				
	(3) The mean of distribution is the number of degree of freedom				
	(4) Chi-square is a static hypothesis and not a parameter				
75.	The performance of a sound insulating material is expressed in terms of				
	(1) Vibration index (2) Sound reduction index				
	(3) Noise level index (4) Sound coefficient				
76.	Which of the following sampling methods is based on probability ?				
	(1) Convenience sampling				
	2) Quota sampling				
	3) Judgement sampling				
	4) Stratified sampling				
	1) An an an building				

Question No.	Questions				
77.	Which one of the following is not a non-parametric test ?				
	(1) t-test (2) Sign test				
	(3) Chi-square test (4) Run test				
78.	In geological studies, a dome shaped intrusion is called as :				
	(1) Volcanic neck (2) Laccolith				
	(3) Nuee ardente (4) Caldera				
79.	The Activated Sludge Process is a wastewater treatment process.				
	(1) Chemical (2) Biological				
•	(3) Physical (4) Biochemical				
80.	The number of organisms of same species per unit area is				
	(1) Dispersion (2) Competition				
	(3) Density (4) Mortality				
81.	Dunes are the most spectacular land forms of ecosystem.				
	(1) Marine (2) Desert				
	(3) Grassland (4) Forest				
82.	Highest level of species richness is observed in				
	(1) Tropical rain forest				
	(2) Temperate grass lands				
	(3) Coniferous forests				
	(4) Alpine pastures				
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Question No.	Questions
83.	The technique of extracting metal from ore bearing rock is calle
ŝ	as:
	(1) Bio extraction
	(2) Microbial extraction
	(3) Bio leaching
	(4) Bio filtration
84.	A compound that is foreign in nature to biological system is
N 9.4	(1) Halogenated compound
	(2) Aromatic compound
	(3) Xenobiotic compound
((4) Organic compound
85.	Which of the following is not true about Hatch and Slack cycle ?
(1) CO_2 acceptor is PEP
(2) Oxaloacetate is first stable product
(3	3) CO_2 compensation point is very high
) Thirty ATP are required for synthesis of one glucose molecule

1)

Question No.	Questions
86.	Which of the following statements about the generation of ATP in the electron transport chains is correct ?
,	(1) The F1 subunit of the ATP synthase contains the motor which is driven to rotate by the proton flow
ку Х	(2) The F0 subunit of the ATP synthase binds ADP and Pi tightly before ATP synthesis occurs
	(3) The F0 subunit of the ATP synthase contains the catalytic centre that synthesizes ATP
	(4) The F1 subunit of the ATP synthase contains the catalytic centre that synthesizes ATP
87.	Chlorella species are widely used in the removal of :
Υ.	(1) Organic waste (2) Hydrocarbons
•	(3) Heavy metals (4) All of these
88.	Cd, Pb and Hg are nephrotoxic metals as they cause harm to organ.
	(1) Liver (2) Kideny
	(3) Pancreas (4) Lungs
89.	Flood which is caused due to heavy rain or dam break within 6-12 hours of
	beginning of rainfall is
	(1) River Floods (2) Flash Floods
	(3) Lag Time Floods (4) Coastal Floods
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Question No.	Questions					
90.	A non directed physico chemical interaction between heavy metal ion					
	and microbial surface are called :					
	(1) Biotransformation (2) Bioconversion					
	(3) Biomining (4) Biosorption					
91.	After 30 PCR cycles, theoretical number of DNA copies produced will b					
	near to :					
	(1) 1073 (2) 107374					
	(3) 10737418 (4) 1073741824					
92.	Tendency of pollutants to become concentrated in the trophic level is :					
	(1) Bioremediation (2) Biomagnification					
	(3) Bio piracy (4) Biorhythm					
93.	The inhibitory effect of oxygen on the rate of photosynthesis is known a					
	(1) Warburg effect (2) Emerson effect					
	(3) Pasteur effect (4) Blackman effect					
94.	The role of chlorine in water treatment is :					
	(1) To remove hardness (2) To remove ions					
	(3) To remove bacteria (4) To act as coagulant agent					
95.	The World Wetland Day is celebrated on					
	(1) 22nd March (2) 5th June					
(3) 16th September (4) 2nd February					
ID/UR	S-EE-2022 (Environmental Science) Code-A (20)					

uestion No.	Questions					
96.	Ergonomic hazards are caused by					
	(1) Machinery					
· .	(2) Poorly designed tools					
	(3) Chemicals					
	(4) Electricity					
97.	Which of the following is a key intermediate compound linking glycolys					
	to Kerb's cycle ?					
	(1) Oxaloacetic acid					
	(2) Acetyl Co A					
× ,	(3) Succinyl CoA					
98.	(4) Pyruvic acid Species that occur in different geographical regions separated by speci					
98.	 (4) Pyruvic acid Species that occur in different geographical regions separated by species barriers are : (1) Allopatric species (2) Endemic species 					
	 (4) Pyruvic acid Species that occur in different geographical regions separated by species barriers are : (1) Allopatric species (2) Endemic species (3) Sibling species (4) Sympatric species 					
98. 99.	 (4) Pyruvic acid Species that occur in different geographical regions separated by species barriers are : (1) Allopatric species (2) Endemic species (3) Sibling species (4) Sympatric species The National Disaster Management Authority is headed by 					
	 (4) Pyruvic acid Species that occur in different geographical regions separated by species barriers are : (1) Allopatric species (2) Endemic species (3) Sibling species (4) Sympatric species The National Disaster Management Authority is headed by (1) Prime Minister of India 					
	 (4) Pyruvic acid Species that occur in different geographical regions separated by species barriers are : (1) Allopatric species (2) Endemic species (3) Sibling species (4) Sympatric species The National Disaster Management Authority is headed by (1) Prime Minister of India (2) President of India 					
	 (4) Pyruvic acid Species that occur in different geographical regions separated by specibarriers are : (1) Allopatric species (2) Endemic species (3) Sibling species (4) Sympatric species The National Disaster Management Authority is headed by (1) Prime Minister of India (2) President of India (3) Environmental Minister 					
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	SET-"Z"
(DO	NOT OPEN THIS QUESTION BOOKLET BEFORE TIME OR UNTIL YOU ARE ASKED TO DO SO)
	(Ph.D/URS-EE - JAN. 2022)
Со	de B ENVIRONMENTAL 10126 SCIENCE Sr. No
Tim	ne: 1¼ Hours Total Questions: 100 Max. Marks: 100
Roll	No (in figure) (in words)
Non	ne : Father's Name :
	her's Name : Date of Examination :
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	(C:fth = Invirilator)
(Sig	nature of the candidate) (Signature of the Invigilator)
1. 2. 3. 4. 5. 6. 7. 8.	All questions are compulsory. The candidates must return the Question book-let as well as OMR answer-sheet to the Invigilator concerned before leaving the Examination Hall, failing which a case of use of unfair-means / mis-behaviour will be registered against him / her, in addition to lodging of an FIR with the police. Further the answer-sheet of such a candidate will not be evaluated. Keeping in view the transparency of the examination system, carbonless OMR Sheet is provided to the candidate so that a copy of OMR Sheet may be kept by the candidate. Question Booklet along with answer key of all the A,B,C and D code will be got uploaded on the university website after the conduct of Entrance Examination. In case there is any discrepancy in the Question Booklet/Answer Key, the same may be brought to the notice of the Controller of Examinations in writing/through E-Mail within 24 hours of uploading the same on the University Website. Thereafter, no complaint in any case, will be considered. The candidate MUST NOT do any rough work or writing in the OMR Answer- Sheet. Rough work, if any, may be done in the question book-let itself. Answers MUST NOT be ticked in the Question book-let. There will be no negative marking. Each correct answer will be awarded one full mark. Cutting, erasing, overwriting and more than one answer in OMR Answer-Sheet will be treated as incorrect answer. Use only Black or Blue <u>BALL POINT PEN</u> of good quality in the OMR Answer- Sheet. BEFORE ANSWERING THE QUESTIONS, THE CANDIDATES SHOULD
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Question No.	
1.	Which one of the following DNA markers can be used to distinguish between a homozygote and heterozygote ?
	(1) RAPD (2) AFLP
·	(3) RFLP (4) ISSR
2.	In Y-shaped energy flow model, one arm represents herbivore and the
	other (1) Carnivore (3) Omnivore (4) Secondary consumer
3.	Which of the following is not present in acid rain ?(1) Peroxyacetylnitrate(2) H_2CO_3 (3) HNO3(4) H_2SO_4
4.	 Which one of the following is not true about characteristics of chi-squar distribution ? (1) Chi-square curve value is always positively skewed (2) Chi-square value decreases with the increase in degree of freedom (3) The mean of distribution is the number of degree of freedom (4) Chi-square is a static hypothesis and not a parameter
5.	The performance of a sound insulating material is expressed in terms of (1) Vibration index (2) Sound reduction index (3) Noise level index (4) Sound coefficient URS-EE-2022 (Environmental Science) Code-B

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Question	Questions
No. 6.	Which of the following sampling methods is based on probability ?
90. 1	 Convenience sampling Quota sampling
•	(3) Judgement sampling
illian di	(4) Stratified sampling
7.	Which one of the following is not a non-parametric test?
	(1) t-test (2) Sign test
1	(3) Chi-square test (4) Run test
8.	In geological studies, a dome shaped intrusion is called as :
	(1) Volcanic neck (2) Laccolith
	(3) Nuee ardente (4) Caldera
9.	The Activated Sludge Process is a wastewater treatment proces
	(1) Chemical (2) Biological
	(3) Physical (4) Biochemical
10,	The number of organisms of same species per unit area is
	(1) Dispersion (2) Competition
	(3) Density (4) Mortality
11.	Most abundant fossil is :
•	(1) Coal (2) Natural gas
	(3) Oil (4) Peat

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Question No.	Questions
12.	Chaparral, Maquis, Encinous, Melleseab are important areas of
	(1) Tropical deciduous woodland
	(2) Temperate evergreen woodland
	(3) Tropical evergreen woodland
•	(4) Temperate deciduous woodland
13.	Which of the following food chain is correct?
	(1) Phytoplankton \rightarrow Zooplankton \rightarrow Turtle \rightarrow Crabs
	(2) Phytoplankton \rightarrow Zooplankton \rightarrow Crab \rightarrow Turtle
	(3) Turtle \rightarrow Crab \rightarrow Zooplankton \rightarrow Phytoplankton
	(4) Zooplankton \rightarrow Turtle \rightarrow Crab \rightarrow Phytoplankton
14.	Two species cannot remain in same place according to
	(1) Allen's law (2) Gause hypothesis
	(3) Doll's rule (4) Weismann's theory
15.	Identify the correct pair :
	(1) Edaphic - Saline soil
ich	(2) Ecotope-Transition between two ecosystems
	(3) Heliophytes-Photophilic plants
4.4	(4) Ecotone-Particular type of soil
16.	Freshwater ecosystems are nutritionally limited by
3	(1) Phosphorous and Iron
	(2) Phosphorous and Carbon
	(3) Iron and Nitrogen
	(4) Nitrogen and Calcium

(3)

Question No.	
17.	'Threshold of Security' refers to the population level at which
	(1) The balance between parasite and host is distance between parasite and host is dis distance between parasite and host is distance between para
	(2) Functional response of the predator is very high.
	(3) Predators no longer find it profitable to hunt for the prey species.
	(4) Parasites damage the host body but do not cause immediate mortality
18.	Which of following statements is incorrect about the enzyme complex whic
	synthesizes ATP during oxidative phosphorylation?
n an	(1) Its activity is not affected by un-coupler
	(2) It contains a protein channel
	(3) It is inhibited by oligomycin
	(4) It binds to molecular oxygen
19.	"Bermuda grass allergy" is a type of
	(1) Contact allergy (2) Airborne allergy
	(3) Hydroborne allergy (4) Soilborne allergy
20.	Which of following blotting techinque is considered more convenient, w no restriction sites are needed to be studied ?
	(1) Northern blotting (2) Dot blot
	(3) Western blotting (4) Southern blotting JRS-EE-2022 (Environmental Science) Code-B

Question No.	Questions
21.	Brown forest soil is also known as
	(1) Mollisols (2) Altisols
	(3) Spodosols (4) Entisols
22.	Establishment of a species in a new area is referred to as
	(1) Ecesis (2) Aggregation
	(3) Stabilization (4) Migration
23.	The Zooplankton of continental shelf is generally the same as in
•	(1) Estuary region (2) Pelagic region
2	(3) Neritic region (4) Benthic region
24.	'Mesothelioma' is caused by toxicity of
al adams to a	(1) Mercury (2) Lead
	(3) Arsenic (4) Carbon monoxide
25.	A volcanic eruption will be violent if there is
	(1) High silica and high volatiles
1 10 to May	(2) High silica and low volatiles
ie de liene	and the second second and the second s
1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	
	(4) Low silica and high volatiles
26.	Clay minerals are
	(1) Tectosilicates (2) Sorosilicates
	(3) Inosilicates (4) (4) Phyllosilicates

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Question No.	
.27.	In biogeochemical cycle, a chemical element or molecule moves through
	(1) Biosphere and lithosphere
有关 .	(2) Biosphere, lithosphere and atmosphere
	(3) Lithosphere and atmosphere
	(4) Biosphere, lithosphere, atmosphere and hydrosphere
28.	Biogas produced by anaerobic bacterial activity is a mixture of
	(1) CH_3OH , CO_2 , NH_3 and H_2O
	(2) CO_2 , SO_2 , NO_2 , CH_4 and H_2O
	(3) H_2S , CO_2 , CO, CH_4 and LPG
•	(4) CH_4 , CO_2 , NH_3 , H_2S and H_2O
29.	Which of the following statements about the oxidative decarboxylation
	pyruvate is correct?
	(1) The oxidative decarboxylation of pyruvate forms acetyl-CoA which
	fed into the citric acid cycle
	(2) The oxidative decarboxylation of pyruvate formed in aerobic glycolys occurs in the cytosol
	(3) The oxidative decarboxylation of pyruvate is catalysed by the enzym pyruvate decarboxylase
	(4) The oxidative decarboxylation of pyruvate is reversible since there
•	a large decrease of free energy in the reaction
30.	Function of Release factor RF2(Prokaryotes)/eRF1 (Eukaryotes) durin
S.	translation is to :
	(1) UAA/UGA recognition (2) Ribosome translocation
Sec.	(3) GDP-Exchanging (4) GTP-Binding

(6)

Question No.	Questions
31.	 Which of the following is not a method for <i>ex-situ</i> conservation of biodiversity? (1) In vitro repositories (2) Cryobanks (3) Botanical gardens (4) National parks
32.	The Protection of Plant varieties and Farmers Rights Act was passed by the Indian Parliament in (1) 1991 (2) 2001 (3) 2014 (4) 2002
33.	Which of the following BOD level waste water is permitted to be released inlands by industries under Water (Prevention and Control of Pollution Act, 1974?(1) 80 mg/l(2) 30 mg/l(3) 150 mg/l(4) 100 mg/l
34.	Which of the following is a scorable marker ? (1) nptII (2) hptIV (3) bar (4) gus
35.	 National Land Reform Policy stresses on (1) Tenancy reforms (2) Natural regeneration (3) Restoration of ecological balance (4) Watershed approach

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Questio No.	Questions
36.	 Which is not true about the idea carrier matrix for enzyme immobilization (1) Low cost (2) Regenerability (3) Stability
tan kara da	(4) Reduction in enzyme specificity
87.	In which years, the Ramsar Convention on Wetlands was held and cominto force ? (1) 1965, 1969 (2) 1961, 1965 (3) 1971, 1975 (4) 1981, 1985
38.	 The Stockholm Convention is a global treaty to protect humans from (1) Toxic gases (2) Hospital acquired infections (3) Persistent organic pollutants (4) Carbon monoxide
39.	Which of the following is not a restriction endonuclease ?(1) DNA ligase(2) Bam H1(3) Eco R1(4) Hind III
40.	Which of the following is the right match concerning the toxic metal ar associated adverse impact ?
•	 (1) Zn-Brain tissue damage (2) Ni-Keratosis (3) Ar-Renal poisoning (4) Hg-Pulmonary disease

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Question No.	Questions
41.	After 30 PCR cycles, theoretical number of DNA copies produced will b
	near to :
	(1) 1073 (2) 107374
	(3) 10737418 (4) 1073741824
42.	Tendency of pollutants to become concentrated in the trophic level is :
	(1) Bioremediation (2) Biomagnification
	(3) Bio piracy (4) Biorhythm
^m 43.	The inhibitory effect of oxygen on the rate of photosynthesis is known as
	(1) Warburg effect (2) Emerson effect
	(3) Pasteur effect (4) Blackman effect
44.	The role of chlorine in water treatment is :
35.:	(1) To remove hardness (2) To remove ions
	(3) To remove bacteria (4) To act as coagulant agent
45.	The World Wetland Day is celebrated on
	(1) 22nd March (2) 5th June
	(3) 16th September (4) 2nd February
46.	Ergonomic hazards are caused by
	(1) Machinery
	(2) Poorly designed tools
	(3) Chemicals
	(4) Electricity

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Question No.	Questions
	Which of the following is a key intermediate compound linking glycolysis
47.	to Kerb's cycle ?
· · · ·	(1) Oxaloacetic acid
	(2) Acetyl Co A(3) Succinyl CoA
48.	Species that occur in different geographical regions separated by specia
	barriers are :
	(1) Allopatric species (2) Endemic species
	(3) Sibling species (4) Sympatric species
49.	The National Disaster Management Authority is headed by
	(1) Prime Minister of India
	(2) President of India
	(3) Environmental Minister
	(4) Chief Ministers of states
50.	The carrying capacity of a population is determined by its :
	(1) Population growth (2) Natality
	(3) Limiting resources (4) Mortality
51.	Pleistocene represents period of
	(1) Cold climate
	(2) Warm climate
	(3) Alteration of cold and warm climate with high proportion of cold per
	(4) Alteration of cold and warm climate with high proportion of cold per
	period.
PHD/U	RS-EE-2022 (Environmental Science) Code-B

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Question No.	Questions
52.	Which of the following is a function of M cyclins (product of cdc 13 gene during cell cycle ?
	(1) Activate Cdk1 for S phase (2) Activate Cdk1 for M phase
	(3) Phosphorylation of Cdk (4) Converts M form of Cdk1 to S form
53.	Which of the following monomer did not make up DNA?
	(1) Deoxythymidylic acid
	(2) Deoxyguanylic acid
era.	(3) Deoxyuridylic acid
•	(4) Deoxycytidine acid
54.	Bio-oil can be obtained from lignocellulose by
Baller .	(1) Combustion (2) Fast pyrolysis
	(3) Gasification (4) Transesterification
55.	During DNA replication, OKazaki fragments are formed on :
ante. Este	(1) Unopened strands (2) Leading strand
	(3) Unopened proteins (4) Lagging strand
56.	The validity period of Environmental Clearance after Environmental Impa
•	Assessment is least for
	(1) Mining projects
	(2) River valley projects
	(3) Harbour projects
	(4) Area development projects

Question No.	Questions
57.	Which statement is not correct for hazardous wastes ?
18-	(1) They contain one or more of 39 toxic compounds
	(2) They catch fire easily
	(3) They are nonreactive and stable
	(4) They are capable of corroding metal containers
58.	Right to clean environment is guaranteed in Indian Constitution by
	(1) Article 14 (2) Article 19
•	(3) Article 21 (4) Article 25
59.	National Ambient Air Quality Standards for major pollutants were notifi by CPCB in
	(1) 1994 (2) 1984
	(3) 2004 (4) 1974
60.	Public Liability Insurance Act came into existence in the year :
	(1) 1986 (2) 1989
	(3) 1991 (4) 1995
61.	Dunes are the most spectacular land forms of ecosystem.
	(1) Marine (2) Desert
	(3) Grassland (4) Forest

Question No.	Questions
62.	Highest level of species richness is observed in
•	(1) Tropical rain forest
	(2) Temperate grass lands
	(3) Coniferous forests
	(4) Alpine pastures
63.	The technique of extracting metal from ore bearing rock is call
	as:
	(1) Bio extraction
-	(2) Microbial extraction
	(3) Bio leaching
	(4) Bio filtration
64.	A compound that is foreign in nature to biological system is
	(1) Halogenated compound
	(2) Aromatic compound
	(3) Xenobiotic compound
¢,	(4) Organic compound
65.	Which of the following is not true about Hatch and Slack cycle ?
	(1) CO_2 acceptor is PEP
	(2) Oxaloacetate is first stable product
	(3) CO_2 compensation point is very high
	(4) Thirty ATP are required for synthesis of one glucose molecule

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Question No.	que			
66.	Which of the following statements about the generation of ATP in the electron transport chains is correct ?			
	(1) The F1 subunit of the ATP synthase contains the motor which is driver to rotate by the proton flow			
	(2) The F0 subunit of the ATP synthase binds ADP and Pi tightly before ATP synthesis occurs			
	(3) The F0 subunit of the ATP synthase contains the catalytic centre tha synthesizes ATP			
	(4) The F1 subunit of the ATP synthase contains the catalytic centre the synthesizes ATP			
67.	Chlorella species are widely used in the removal of :			
	 Organic waste Hydrocarbons Heavy metals All of these 			
68.	Cd, Pb and Hg are nephrotoxic metals as they cause harm to organ (1) Liver (2) Kideny			
	(3) Pancreas (4) Lungs			
69.	Flood which is caused due to heavy rain or dam break within 6-12 hours beginning of rainfall is			
	(1) River Floods (2) Flash Floods			

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Code-B

Question	Questions
70.	 A non directed physico chemical interaction between heavy metal ions and microbial surface are called : (1) Biotransformation (2) Bioconversion (3) Biomining (4) Biosorption
71.	The rate of variation of population (N) with time (t) represented by equation dN/dt = γ N, follows (1) J-shaped curve (2) S-shaped curve (3) Z-shaped curve (4) Parabolic curve
72.	The soil type which is good for agriculture is (1) Podozols (2) Latosols (3) Serpent Soil (4) Solonachak
73.	 Restoration of genetic diversity of a population can be obtained by : (1) Sexual selection (2) Mutation (3) Genetic drift (4) Stabilising selection
74.	As per Indian Standards (BIS) for drinking water desirable limit for total hardness as CaCO ₃ is (1) 100 mg/l (2) 200 mg/l (3) 300 mg/l (4) 400 mg/l

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Question No.	Questions
75.	The smokestack plumes exhibit 'coning' behaviour when
	(1) Stable atmospheric conditions exist
	(2) Atmosphere is unstable
	(3) The height of the stack is below the inversion layer
	(4) Inversion exists right from the ground surface above
76.	Among total dissolved matter in marine water, chlorine accounts for
	(1) 30% (2) 55%
	(3) 12% (4) 6%
77.	Peroxyacetyl Nitrate (PAN) is formed by oxidation of
- An	(i) Hydrocarbons (ii) Isoprene
	(iii) Terpene (iv) Arsenic
a di manun i sana A	Choose the correct answer from the codes :
	(1) (i) and (iv)
	(2) (ii) and (iv)
	(3) (iii) and (iv)
	(4) (i), (ii) and (iii)
78.	The evolution of genetic resistance to antibiotics among disease-carryin
	bacteria is an example of
	(1) Stabilizing natural selection
•	(2) Directional natural selection
5	(3) Diversifying natural selection
br.	(4) Convergent natural selection

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Code-B

Question No.	Questions
79.	Beer's Law is applicable in case of :
	(1) Heat transfer
	(2) Convection studies
	(3) Transmission of light
·	(4) Photochemical reaction
80.	Anemometer is used to measure
	(1) Atmospheric pressure (2) Wind speed
	(3) Atmospheric temperature (4) Wind velocity
81.	Amount of 8-hydroxyquinoline (M.W. 145.16) required for preparing 100
	ml of 5 ppm solution is :
	(1) 1.45 mg (2) 5 mg
	(3) 7.25 mg (4) 14.5 mg
82.	Long term stability of a community depends on :
k.:	(1) Biodiversity (2) Resource partitioning
	(3) Biotic component (4) Succession
83.	The external appearance of the community which may be described on t
m • .	basis of dominant plants, density height, colour etc. of plants is know
	as:
	(1) Periodicity (2) Phenology
	(3) Physiognomy (4) Aspection
PHD/	JRS-EE-2022 (Environmental Science) Code-B (17)
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Question No.	Questions		
84.	 IUCN headquarters is at : (1) Paris, France (2) Vienna, Austria (3) Morges, Switzerland (4) New York, USA 		
85.	As compared to CO ₂ , methane has global warming potential of : (1) 5-10 times more (3) 40-45 times more (4) 60-65 times more		
86.	 Laterite soil contains more of (1) Manganese and Silicate (2) Magnesium and Boron (3) Iron and Aluminium (4) Potassium and Lead 		
87.	 Universally accepted method for isolating semivolatile organic compound from their matrices is (1) Solvent extraction (2) Double infiltration (3) Sedimentation technique (4) Permeation 		
88.	The kind of association where both the population are benefitted, but nessential for the survival of either population is referred to as :(1) Competition(2) Exploitation(3) Amensalism(4) Protocooperation		

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Question No.	Questions			
89,	Species diversity increases as one proceeds from			
	(1) Higher to lower altitude and lower to higher latitude			
	(2) Lower to higher altitude and higher to lower latitude			
	(3) Lower to higher altitude and lower to higher latitude			
	(4) Higher to lower altitude and higher to lower latitude			
90.	Which of the following ecosystems has the lowest net primary productio			
n an ann a'	per square metere ?			
14145-2	(1) A grassland			
	(2) An open ocean			
	(3) A Coral reef			
	(4) A tropical rain forest			
91.	Which of the foillowing is not present in soluble state in alkaline soils ?			
	(1) Potassium (2) Calcium			
1 - Villana, Statemet	(3) Nitrates (4) Phosphorous			
92.	Which of the following artificial chromosome has largest carrying capacity			
	(1) BAC (2) YAC			
7	(3) PAC [4] (1) MAC			

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Question No.	Questions	
93.	 Which is the correct sequence for impact assessment process in EIA ? (1) Prediction of impacts → Identification of impacts → Description of environment → Evaluation of impacts → Identification of mitigation needs. (2) Identification of impacts → Prediction of impacts → Evaluation of impacts → Identification of mitigation needs. (3) Identification of impacts → Description of environment → Prediction of impacts → Evaluation of environment → Prediction of impacts → Evaluation of mitigation needs. 	
	 (4) Description of environment → Identification of impacts → Prediction of impacts → Evaluation of impacts → Identification of mitigation needs. 	
94.	The most commonly used method for desalinization of water is :(1) Distillation(2) Reverse osmosis(3) Ion-exchange(4) Electrodialysis.	
95.	 Which of the following pertains to "high-waste approach" in dealing the solid and hazardous wastes ? (1) Composting (2) Recycling (3) Burying and burning (4) Reusing 	
96.	 In most of the studies, a large sample size is anticipated to (1) Maximize the sampling error (2) Get a low level of precision (3) Maximize the standard deviation (4) Get a high level of precision. 	

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Question No.	Questions
97.	The geometric mean of 4, 8 and 16 is
	(1) 9.1 (2) 4.6
e.	(3) 8.0 (4) 10.2
98.	Copper (Cu) is classified according to its geochemical affinity as :
	(1) Chalcophile element
	(2) Siderophile element
	(3) Atmophile element
. ·	1077 - 21 K
99.	(4) Lithophile element Which of the following is used in manufacturing flexible plastic bags ar
99.	 Which of the following is used in manufacturing flexible plastic bags an sheets ? (1) Polyethylene terephthalate (2) Polystyrene (3) TEFLON
99.	 Which of the following is used in manufacturing flexible plastic bags an sheets ? (1) Polyethylene terephthalate (2) Polystyrene
99.	 Which of the following is used in manufacturing flexible plastic bags an sheets ? (1) Polyethylene terephthalate (2) Polystyrene (3) TEFLON
	 Which of the following is used in manufacturing flexible plastic bags an sheets ? (1) Polyethylene terephthalate (2) Polystyrene (3) TEFLON (4) Low density polyethylene
	 Which of the following is used in manufacturing flexible plastic bags an sheets ? (1) Polyethylene terephthalate (2) Polystyrene (3) TEFLON (4) Low density polyethylene Which one of the following is a non-formal environment education an awareness programme ?
	 Which of the following is used in manufacturing flexible plastic bags an sheets ? (1) Polyethylene terephthalate (2) Polystyrene (3) TEFLON (4) Low density polyethylene Which one of the following is a non-formal environment education an awareness programme ? (1) Environmental appreciation courses

SET-"Z"

(DO NOT OPEN THIS QUESTION BOOKLET BEFORE TIME OR UNTIL YOU ARE ASKED TO DO SO)

(Ph.D/URS-EE - JAN. 2022)

ENVIRONMENTAL SCIENCE

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Sr.	No.				

Code C	SCIENCE	C
Time: 1 ¹ / ₄ Hours	Total Questions : 100 (in figure)	Max. Marks : 100 (in words)
Roll No Name : Mother's Name :	Father's National States of Ever	me : nination :

(Signature of the candidate)

(Signature of the Invigilator)

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Question No.	Questions
1.	The rate of variation of population (N) with time (t) represented by equation $dN/dt = \gamma$ N, follows
	(1) J-shaped curve (2) S-shaped curve
	(3) Z-shaped curve (4) Parabolic curve
2.	The soil type which is good for agriculture is
1 - 1	(1) Podozols (2) Latosols
	(3) Serpent Soil (4) Solonachak
3.	Restoration of genetic diversity of a population can be obtained by :
н. Н	(1) Sexual selection
_	(2) Mutation
• • •	(3) Genetic drift
	(4) Stabilising selection
4.	As per Indian Standards (BIS) for drinking water desirable limit for total hardness as $CaCO_3$ is
	(1) 100 mg/l (2) 200 mg/l
* * * * * * * * * * * * * * * * * * *	(3) 300 mg/l (4) 400 mg/l
5.	The smokestack plumes exhibit 'coning' behaviour when
	(1) Stable atmospheric conditions exist
	(2) Atmosphere is unstable
	(3) The height of the stack is below the inversion layer
	(4) Inversion exists right from the ground surface above
PHD/UH	RS-EE-2022 (Environmental Science) Code-C (1)

uestion No.	Questions
6.	Among total dissolved matter in marine water, chlorine accounts for
	(1) 30% (2) 55%
•	(3) 12% (4) 6%
7.	Peroxyacetyl Nitrate (PAN) is formed by oxidation of
	(i) Hydrocarbons (ii) Isoprene
	(iii) Terpene (iv) Arsenic
	Choose the correct answer from the codes :
	(1) (i) and (iv)
3 - 1 - 1 - 1 	(2) (ii) and (iv)
	(3) (iii) and (iv)
	(4) (i), (ii) and (iii)
8.	The evolution of genetic resistance to antibiotics among disease-carryi
	bacteria is an example of
	(1) Stabilizing natural selection
	(2) Directional natural selection
	(3) Diversifying natural selection
	(4) Convergent natural selection
9.	Beer's Law is applicable in case of :
	(1) Heat transfer
	(2) Convection studies
	(3) Transmission of light
	(4) Photochemical reaction

Question No.	Questions
10.	Anemometer is used to measure
· · ·	(1) Atmospheric pressure (2) Wind speed
¥.	(3) Atmospheric temperature (4) Wind velocity
11.	Amount of 8-hydroxyquinoline (M.W. 145.16) required for preparing 1000 ml of 5 ppm solution is :
	(1) 1.45 mg (2) 5 mg
	(3) 7.25 mg (4) 14.5 mg
12.	Long term stability of a community depends on :
	(1) Biodiversity (2) Resource partitioning
	(3) Biotic component (4) Succession
al des	(a) a province componing in a constraint (4) and the strong degrade and provide the constraint of the strong of th
13.	The external appearance of the community which may be described on th basis of dominant plants, density height, colour etc. of plants is known
13.	The external appearance of the community which may be described on the basis of dominant plants, density height, colour etc. of plants is known as:
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13.	The external appearance of the community which may be described on the basis of dominant plants, density height, colour etc. of plants is known as: (1) Periodicity (2) Phenology
	The external appearance of the community which may be described on the basis of dominant plants, density height, colour etc. of plants is known as: (1) Periodicity (2) Phenology (3) Physiognomy (4) Aspection
	The external appearance of the community which may be described on the basis of dominant plants, density height, colour etc. of plants is known as: (1) Periodicity (2) Phenology (3) Physiognomy (4) Aspection IUCN headquarters is at : (1) Periodicity
	The external appearance of the community which may be described on the basis of dominant plants, density height, colour etc. of plants is known as: (1) Periodicity (2) Phenology (3) Physiognomy (4) Aspection IUCN headquarters is at : (1) Paris, France (1) Paris, France (2) Vienna, Austria
14.	The external appearance of the community which may be described on the basis of dominant plants, density height, colour etc. of plants is known as: (1) Periodicity (2) Phenology (3) Physiognomy (4) Aspection IUCN headquarters is at : (1) Paris, France (3) Morges, Switzerland (4) New York, USA

(3)

Question No.	Questions
16.	Laterite soil contains more of
 	(1) Manganese and Silicate (2) Magnesium and Boron
23	(3) Iron and Aluminium (4) Potassium and Lead
17.	Universally accepted method for isolating semivolatile organic compounds from their matrices is
	(1) Solvent extraction (2) Double infiltration
Sparne - La marche	(3) Sedimentation technique (4) Permeation
18.	The kind of association where both the population are benefitted, but no essential for the survival of either population is referred to as :(1) Competition(2) Exploitation(3) Amensalism(4) Protocooperation
19.	Species diversity increases as one proceeds from
	(1) Higher to lower altitude and lower to higher latitude
	(2) Lower to higher altitude and higher to lower latitude
	(3) Lower to higher altitude and lower to higher latitude
	(4) Higher to lower altitude and higher to lower latitude
20.	Which of the following ecosystems has the lowest net primary production per square metere ?
	(1) A grassland (2) An open ocean
• • • •	(3) A Coral reef (4) A tropical rain forest

Questio No.	Questions
21.	Which of the foillowing is not present in soluble state in alkaline soils ?
	(1) Potassium (2) Calcium
	(3) Nitrates (4) Phosphorous
22.	Which of the following artificial chromosome has largest carrying capacity?
	(1) BAC (2) YAC
•	(3) PAC (4) (1) MAC
23.	Which is the correct sequence for impact assessment process in EIA ?
	 Prediction of impacts → Identification of impacts → Description of environment → Evaluation of impacts → Identification of mitigation needs. Identification of impacts → Prediction of impacts → Evaluation of impacts → Identification of mitigation needs. Identification of impacts → Description of environment → Prediction of impacts → Evaluation of impacts → Identification of mitigation needs.
	 (4) Description of environment → Identification of impacts → Prediction of impacts → Evaluation of impacts → Identification of mitigation needs.
24.	The most commonly used method for desalinization of water is :
	(1) Distillation (2) Reverse osmosis
	(3) Ion-exchange (4) Electrodialysis.
'HD/UH	CS-EE-2022 (Environmental Science) Code-C (5)

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Question No.	Questions
25.	Which of the following pertains to "high-waste approach" in dealing with the solid and hazardous wastes ?
	 Composting Recycling Burying and burning Reusing
26.	In most of the studies, a large sample size is anticipated to
	 Maximize the sampling error Get a low level of precision Maximize the standard deviation
	(4) Get a high level of precision.
27.	The geometric mean of 4, 8 and 16 is (1) 9.1 (2) 4.6 (3) 8.0 (4) 10.2
28.	Copper (Cu) is classified according to its geochemical affinity as : (1) Chalcophile element (2) Siderophile element (3) Atmophile element
	(4) Lithophile element
29.	Which of the following is used in manufacturing flexible plastic bags a sheets ?
	(1) Polyethylene terephthalate
	(2) Polystyrene(3) TEFLON
	(4) Low density polyethylene

Questie No.	Questions
30.	Which one of the following is a non-formal environment education an awareness programme?
	(1) Environmental appreciation courses
	(2) Environmental Education in school system
	(3) National Environment Awareness Campaign
	(4) Environmental Management Business Studies
31.	Dunes are the most spectacular land forms of ecosystem.
	(1) Marine (2) Desert
	(3) Grassland (4) Forest
	 Tropical rain forest Temperate grass lands Coniferous forests Alpine pastures
á	The technique of extracting metal from ore bearing rock is calle as: (1) Bio extraction
	 Bio extraction Microbial extraction
(3) Bio leaching
	4) Bio filtration

Question No.	Questions
34.	A compound that is foreign in nature to biological system is
	(1) Halogenated compound (2) Aromatic compound
	(3) Xenobiotic compound (4) Organic compound
35.	Which of the following is not true about Hatch and Slack cycle ?
	(1) CO ₂ acceptor is PEP
	(2) Oxaloacetate is first stable product
	(3) CO ₂ compensation point is very high
	(4) Thirty ATP are required for synthesis of one glucose molecule
36.	Which of the following statements about the generation of ATP in the electron transport chains is correct ?
	(1) The F1 subunit of the ATP synthase contains the motor which is driver to rotate by the proton flow
	2) The F0 subunit of the ATP synthase binds ADP and Pi tightly before ATP synthesis occurs
	3) The F0 subunit of the ATP synthase contains the catalytic centre that synthesizes ATP
(4) The F1 subunit of the ATP synthase contains the catalytic centre that synthesizes ATP

2.5

(8)

Question No.	Questions
37.	Chlorella species are widely used in the removal of :
	(1) Organic waste (2) Hydrocarbons
la marine de	(3) Heavy metals (4) All of these
38.	Cd, Pb and Hg are nephrotoxic metals as they cause harm to organ
	(1) Liver (2) Kideny
	(3) Pancreas (4) Lungs
20 A	Flood which is caused due to heavy rain or dam break within 6-12 hours beginning of rainfall is
	(1) River Floods (2) Flash Floods
100 00 100 •120 01 00 •120 01 00	(3) Lag Time Floods (4) Coastal Floods
	A non directed physico chemical interaction between heavy metal ions an nicrobial surface are called :
(1) Biotransformation (2) Bioconversion
(3) Biomining (4) Biosorption
41. P	leistocene represents period of
(l) Cold climate
(2	?) Warm climate
(Alteration of cold and warm climate with high proportion of cold perio
(4) Alteration of cold and warm climate with very high proportion of warr
	period.

 Which of the following is a function of M cyclins (product of cdc 13 gene) during cell cycle ? (1) Activate Cdk1 for S phase (2) Activate Cdk1 for M phase
(1) Activate Cdk1 for S phase (2) Activate Cdk1 for M phase
(3) Phosphorylation of Cdk (4) Converts M form of Cdk1 to S form
Which of the following monomer did not make up DNA?
(1) Deoxythymidylic acid
(2) Deoxyguanylic acid
(3) Deoxyuridylic acid
(4) Deoxycytidine acid
Bio-oil can be obtained from lignocellulose by
(1) Combustion (2) Fast pyrolysis
3) Gasification (4) Transesterification
During DNA replication, OKazaki fragments are formed on :
1) Unopened strands (2) Leading strand
3) Unopened proteins (4) Lagging strand
The validity period of Environmental Clearance after Environmental Impa
ssessment is least for
1) Mining projects
2) River valley projects
3) Harbour projects
) Area development projects

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Question No.	Questions
47.	Which statement is not correct for hazardous wastes ?
а	(1) They contain one or more of 39 toxic compounds
e y	(2) They catch fire easily
	(3) They are nonreactive and stable
	(4) They are capable of corroding metal containers
48.	Right to clean environment is guaranteed in Indian Constitution by
	(1) Article 14 (2) Article 19
	(3) Article 21 (4) Article 25
49.	National Ambient Air Quality Standards for major pollutants were notifie by CPCB in
	(1) 1994 (2) 1984
	(3) 2004 (4) 1974
50.	Public Liability Insurance Act came into existence in the year :
	(1) 1986 (2) 1989
	(3) 1991 (4) 1995
51.	Brown forest soil is also known as
	(1) Mollisols (2) Altisols
	(3) Spodosols (4) Entisols

(11)

Question No.	Questions
52.	Establishment of a species in a new area is referred to as
	(1) Ecesis (2) Aggregation
,	(3) Stabilization (4) Migration
53.	The Zooplankton of continental shelf is generally the same as in
	(1) Estuary region (2) Pelagic region
	(3) Neritic region (4) Benthic region
.54.	'Mesothelioma' is caused by toxicity of
	(1) Mercury (2) Lead
	(3) Arsenic (4) Carbon monoxide
55.	A volcanic eruption will be violent if there is
	(1) High silica and high volatiles
	(2) High silica and low volatiles
	(3) Low silica and low volatiles
	(4) Low silica and high volatiles
56.	Clay minerals are
	(1) Tectosilicates (2) Sorosilicates
	(3) Inosilicates (4) Phyllosilicates
57.	In biogeochemical cycle, a chemical element or molecule moves throug
	(1) Biosphere and lithosphere
	(2) Biosphere, lithosphere and atmosphere
	(3) Lithosphere and atmosphere
	(4) Biosphere, lithosphere, atmosphere and hydrosphere

Question No.	Questions
58.	Biogas produced by anaerobic bacterial activity is a mixture of
	(1) CH ₃ OH, CO ₂ , NH ₃ and H ₂ O
	(2) CO_2 , SO_2 , NO_2 , CH_4 and H_2O
	(3) H_2S , CO_2 , CO , CH_4 and LPG
	(4) CH_4 , CO_2 , NH_3 , H_2S and H_2O
59.	Which of the following statements about the oxidative decarboxylation of pyruvate is correct?
	(1) The oxidative decarboxylation of pyruvate forms acetyl-CoA which i fed into the citric acid cycle
	(2) The oxidative decarboxylation of pyruvate formed in aerobic glycolys occurs in the cytosol
	(3) The oxidative decarboxylation of pyruvate is catalysed by the enzym pyruvate decarboxylase
	(4) The oxidative decarboxylation of pyruvate is reversible since there is a large decrease of free energy in the reaction
· · · /	Function of Release factor RF2(Prokaryotes)/eRF1 (Eukaryotes) durin translation is to :
a tora a ca	(1) UAA/UGA recognition
	2) Ribosome translocation
	3) GDP-Exchanging
	4) GTP-Binding

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Question No.	
61.	Which one of the following DNA markers can be used to distinguish betwee a homozygote and heterozygote ?
:	(1) RAPD (3) RFLP (4) ISSR
62.	In Y-shaped energy flow model, one arm represents herbivore and the other
	(1) Carnivore (2) Decomposer
	(3) Omnivore (4) Secondary consumer
63.	Which of the following is not present in acid rain ?
	(1) Peroxyacetylnitrate (2) H_2CO_3
	(3) HNO_3 (4) H_2SO_4
5 a	Which one of the following is not true about characteristics of chi-squa listribution ?
(1) Chi-square curve value is always positively skewed
	2) Chi-square value decreases with the increase in degree of freedom
49 ¹²	3) The mean of distribution is the number of degree of freedom
. 2.5	4) Chi-square is a static hypothesis and not a parameter
65. T	he performance of a sound insulating material is expressed in terms of
	1) Vibration index (2) Sound reduction index
6	3) Noise level index (4) Sound coefficient

Question No.	Questions
66.	Which of the following sampling methods is based on probability ?
	(1) Convenience sampling
• * • *	(2) Quota sampling
	(3) Judgement sampling
	(4) Stratified sampling
67.	Which one of the following is not a non-parametric test ?
· .	(1) t-test (2) Sign test
	(3) Chi-square test (4) Run test
68.	In geological studies, a dome shaped intrusion is called as :
	(1) Volcanic neck (2) Laccolith
	(3) Nuee ardente (4) Caldera
69. '	The Activated Sludge Process is a wastewater treatment proces
	(1) Chemical (2) Biological
(3) Physical (4) Biochemical
70. Т	he number of organisms of same species per unit area is
(1) Dispersion (2) Competition
(:	3) Density (4) Mortality
71. A	fter 30 PCR cycles, theoretical number of DNA copies produced wil
n	ear to :
(1) 1073 (2) 107374
(3) 10737418 (4) 1073741824
D/URS	-EE-2022 (Environmental Science) Code-C

uestion No.	Questions	
72.	Tendency of pollutants to become concentrated in the trophic level is :	
•	(1) Bioremediation (2) Biomagnification	
3	(3) Bio piracy (4) Biorhythm	
73.	The inhibitory effect of oxygen on the rate of photosynthesis is known a	
	(1) Warburg effect (2) Emerson effect	
• - 1469+44	(3) Pasteur effect (4) Blackman effect	
74.	The role of chlorine in water treatment is :	
	(1) To remove hardness (2) To remove ions	
	(3) To remove bacteria (4) To act as coagulant agent	
75.	The World Wetland Day is celebrated on	
	(1) 22nd March (2) 5th June	
	(3) 16th September (4) 2nd February	
76.	Ergonomic hazards are caused by	
• <u>, , , , , , , , , , , , , , , , , , ,</u>	(1) Machinery	
•	(2) Poorly designed tools	
	(3) Chemicals	
	(4) Electricity	
77.	Which of the following is a key intermediate compound linking glycoly	
	to Kerb's cycle ?	
	(1) Oxaloacetic acid	
	(2) Acetyl Co A	
	(3) Succinyl CoA	
	(4) Pyruvic acid	
	RS-EE-2022 (Environmental Science) Code-C	

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Question No.	Questions
78.	Species that occur in different geographical regions separated by special barriers are :
	(1) Allopatric species (2) Endemic species
	(3) Sibling species (4) Sympatric species
79.	The National Disaster Management Authority is headed by
	(1) Prime Minister of India
	(2) President of India
	(3) Environmental Minister
	(4) Chief Ministers of states
80.	The carrying capacity of a population is determined by its :
	(1) Population growth (2) Natality
	(3) Limiting resources (4) Mortality
	Which of the following is not a method for <i>ex-situ</i> conservation opiodiversity?
	1) In vitro repositories (2) Cryobanks
(3) Botanical gardens (4) National parks
82. 7	The Protection of Plant varieties and Farmers Rights Act was passed b
t	he Indian Parliament in
0	1) 1991 (2) 2001
	3) 2014 (4) 2002

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Question No.	Questions
83.	Which of the following BOD level waste water is permitted to be released inlands by industries under Water (Prevention and Control of Pollution) Act, 1974 ?
	(1) 80 mg/l (2) 30 mg/l
	(3) 150 mg/l (4) 100 mg/l
84.	Which of the following is a scorable marker ?
	(1) nptII (2) hptIV
-	(3) bar (4) gus
85.	National Land Reform Policy stresses on
n samendy	(1) Tenancy reforms
т	(2) Natural regeneration
	(3) Restoration of ecological balance
	(4) Watershed approach
86.	Which is not true about the idea carrier matrix for enzyme immobilization
	(1) Low cost
	(2) Regenerability
	(3) Stability
с. 	(4) Reduction in enzyme specificity
87.	In which years, the Ramsar Convention on Wetlands was held and con
	into force ?
	(1) 1965, 1969 (2) 1961, 1965
· .	(3) 1971, 1975 (4) 1981, 1985

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Question No.	Questions
88.	The Stockholm Convention is a global treaty to protect humans from
· · · ·	 Toxic gases Hospital acquired infections Persistent organic pollutants Carbon monoxide
89.	Which of the following is not a restriction endonuclease ?
	(1) DNA ligase (2) Bam H1
	(3) Eco R1 (4) Hind III
٤ (Which of the following is the right match concerning the toxic metal arassociated adverse impact ?(1) Zn-Brain tissue damage(2) Ni-Keratosis(3) Ar-Renal poisoning(4) Hg-Pulmonary disease
91. N	Most abundant fossil is :
	1) Coal (2) Natural gas
	3) Oil (4) Peat
92. C	Chaparral, Maquis, Encinous, Melleseab are important areas of
	 Tropical deciduous woodland Temperate evergreen woodland
(3	3) Tropical evergreen woodland
) Temperate deciduous woodland

Question No.	Questions
93.	Which of the following food chain is correct ?
	(1) Phytoplankton \rightarrow Zooplankton \rightarrow Turtle \rightarrow Crabs
	(2) Phytoplankton \rightarrow Zooplankton \rightarrow Crab \rightarrow Turtle
. 1	(3) Turtle \rightarrow Crab \rightarrow Zooplankton \rightarrow Phytoplankton
	(4) Zooplankton \rightarrow Turtle \rightarrow Crab \rightarrow Phytoplankton
94.	Two species cannot remain in same place according to
	(1) Allen's law (2) Gause hypothesis
	(3) Doll's rule (4) Weismann's theory
95.	Identify the correct pair :
	(1) Edaphic - Saline soil
	(2) Ecotope-Transition between two ecosystems
	(3) Heliophytes- Photophilic plants
	(4) Ecotone-Particular type of soil
96.	Freshwater ecosystems are nutritionally limited by
	(1) Phosphorous and Iron
	(2) Phosphorous and Carbon
•	(3) Iron and Nitrogen
	(4) Nitrogen and Calcium

PHD/URS-EE-2022 (Environmental Science) Code-C (20)

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Question No.	Questions
97.	'Threshold of Security' refers to the population level at which
	(1) The balance between parasite and host is disturbed as the hos produces antibodies.
	(2) Functional response of the predator is very high.
,	(3) Predators no longer find it profitable to hunt for the prey species.
	(4) Parasites damage the host body but do not cause immediate mortality
98.	Which of following statements is incorrect about the enzyme complex which synthesizes ATP during oxidative phosphorylation ?
	(1) Its activity is not affected by un-coupler
	(2) It contains a protein channel
	(3) It is inhibited by oligomycin
а. у. у.	(4) It binds to molecular oxygen
99.	"Bermuda grass allergy" is a type of
	(1) Contact allergy (2) Airborne allergy
	(3) Hydroborne allergy (4) Soilborne allergy
	Which of following blotting techinque is considered more convenient, when no restriction sites are needed to be studied ?
	(1) Northern blotting (2) Dot blot
	(3) Western blotting (4) Southern blotting

(21)

	(Ph.D/URS-EE - JAN. 2022)	
Code D	ENVIRONMENTAL SCIENCE	sr. No. 128
Time: 1¼ Hours	Total Questions : 100	Max. Marks : 100
Roll No	(in figure)	(in words)
Name :	Father's Name :	
Mother's Name :	Date of Examina	ation :

(Signature of the candidate)

(Signature of the Invigilator)

CANDIDATES MUST READ THE FOLLOWING INFORMATION/ INSTRUCTIONS BEFORE STARTING THE QUESTION PAPER.

- 1. All questions are compulsory.
- 2. The candidates must return the Question book-let as well as ONT answer-sheet to the Invigilator concerned before leaving the Examination H failing which a case of use of unfair-means / mis-behaviour will be register against him / her, in addition to lodging of an FIR with the police. Further the answer-sheet of such a candidate will not be evaluated.
- 3. Keeping in view the transparency of the examination system, carbonless ON Sheet is provided to the candidate so that a copy of OMR Sheet may be kept the candidate.
- 4. Question Booklet along with answer key of all the A,B,C and D code will be got uploaded on the university website after the conduct of Entrance Examination. In case there is any discrepancy in the Question Booklet/Answer Key, the same may be brought to the notice of the Controller of Examinations in writing/through E-Mail within 24 hours of uploading the same on the University Website. Thereafter, no complaint in any case, will be considered.
- 5. The candidate MUST NOT do any rough work or writing in the OMR Answer-Sheet. Rough work, if any, may be done in the question book-let itself. Answers MUST NOT be ticked in the Question book-let.
- 6. There will be no negative marking. Each correct answer will be awarded one full mark. Cutting, erasing, overwriting and more than one answer in OMR Answer-Sheet will be treated as incorrect answer.
- 7. Use only Black or Blue <u>BALL POINT PEN</u> of good quality in the OMR Answer-Sheet.
- 8. BEFORE ANSWERING THE QUESTIONS, THE CANDIDATES SHOULD ENSURE THAT THEY HAVE BEEN SUPPLIED CORRECT AND COMPLETE BOOK-LET. COMPLAINTS, IF ANY, REGARDING MISPRINTING ETC. WILL NOT BE ENTERTAINED 30 MINUTES AFTER STARTING OF THE EXAMINATION.

Code-D

	Questions
1.	Which of the following is not a method for <i>ex-situ</i> conservation of biodiversity?
	(1) In vitro repositories (2) Cryobanks
	(3) Botanical gardens (4) National parks
2.	The Protection of Plant varieties and Farmers Rights Act was passed by the Indian Parliament in
	(1) 1991 (2) 2001
	(3) 2014 (4) 2002
3.	Which of the following BOD level waste water is permitted to be released inlands by industries under Water (Prevention and Control of Pollution Act, 1974 ?
	(1) 80 mg/l (2) 30 mg/l
*. *.	
4.	 (3) 150 mg/l (4) 100 mg/l Which of the following is a scorable marker ? (1) nptII (2) hptIV
4.	 (3) 150 mg/l (4) 100 mg/l Which of the following is a scorable marker ?
4.	 (1) 150 mg/l (2) hptIV (3) bar (4) gus National Land Reform Policy stresses on (1) Tenancy reforms
÷	 (3) 150 mg/l (4) 100 mg/l Which of the following is a scorable marker ? (1) nptII (2) hptIV (3) bar (4) gus National Land Reform Policy stresses on

Code-D

Question No.	Questions
6.	Which is not true about the idea carrier matrix for enzyme immobilization
	(1) Low cost
	(2) Regenerability
	(3) Stability
	(4) Reduction in enzyme specificity
7.	In which years, the Ramsar Convention on Wetlands was held and come into force ?
	(1) 1965, 1969 (2) 1961, 1965
•	(3) 1971, 1975 (4) 1981, 1985
8.	The Stockholm Convention is a global treaty to protect humans from
	(1) Toxic gases
	(2) Hospital acquired infections
	(3) Persistent organic pollutants
	(4) Carbon monoxide
9.	Which of the following is not a restriction endonuclease ?
	(1) DNA ligase (2) Bam H1
	(3) Eco R1 (4) Hind III
	Which of the following is the right match concerning the toxic metal and associated adverse impact ?
	1) Zn-Brain tissue damage (2) Ni-Keratosis
0	3) Ar-Renal poisoning (4) Hg-Pulmonary disease
HD/UR	S-EE-2022 (Environmental Science) Code-D (2)

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Question No.	Questions
11.	After 30 PCR cycles, theoretical number of DNA copies produced will be
	near to :
	(1) 1073 (2) 107374
	(3) 10737418 (4) 1073741824
12.	Tendency of pollutants to become concentrated in the trophic level is :
	(1) Bioremediation (2) Biomagnification
	(3) Bio piracy (4) Biorhythm
13.	The inhibitory effect of oxygen on the rate of photosynthesis is known as
	(1) Warburg effect (2) Emerson effect
	(3) Pasteur effect (4) Blackman effect
14.	The role of chlorine in water treatment is :
	(1) To remove hardness (2) To remove ions
	(3) To remove bacteria (4) To act as coagulant agent
15.	The World Wetland Day is celebrated on
	(1) 22nd March (2) 5th June
	(3) 16th September (4) 2nd February
16.	Ergonomic hazards are caused by
	(1) Machinery
	(2) Poorly designed tools
	(3) Chemicals
	(4) Electricity
PHD/UI	RS-EE-2022 (Environmental Science) Code-D (3)

Code-D

	Code-
Question No.	Questions
17.	Which of the following is a key intermediate compound linking glycoly
	to Kerb's cycle ?
	(1) Oxaloacetic acid
	(2) Acetyl Co A
	(3) Succinyl CoA
	(4) Pyruvic acid
18.	Species that occur in different geographical regions separated by speci
	barriers are :
	(1) Allopatric species (2) Endemic species
	(3) Sibling species (4) Sympatric species
19.	The National Disaster Management Authority is headed by
	(1) Prime Minister of India
	(2) President of India
	(3) Environmental Minister
	(4) Chief Ministers of states
20.	The carrying capacity of a population is determined by its :
	(1) Population growth (2) Natality
0	3) Limiting resources (4) Mortality
21. V	Which one of the following DNA markers can be used to distinguish betwee
	homozygote and heterozygote ?
	1) RAPD (2) AFLP
(6	3) RFLP (4) ISSR

(4)

Code-D

	In Y-shaped energy flow model, one arm represents herbivore and the other (1) Carnivore (2) Decomposer
	 (1) Carnivore (2) Decomposer
	(2) Decomposer
	(3) Omnivore (4) Secondary consumer
23.	Which of the following is not present in acid rain ?
	(1) Peroxyacetylnitrate (2) H ₂ CO ₂
	(3) HNO_3 (4) H_2SO_4
24.	Which one of the following is not true about characteristics of chi-squar distribution ?
	(1) Chi-square curve value is always positively skewed
((2) Chi-square value decreases with the increase in degree of freedom
. ((3) The mean of distribution is the number of degree of freedom
	(4) Chi-square is a static hypothesis and not a parameter
25.]	The performance of a sound insulating material is expressed in terms of
	(1) Vibration index (2) Sound reduction index
C	(3) Noise level index (4) Sound coefficient
26. V	Which of the following sampling methods is based on probability ?
	1) Convenience sampling
(2	2) Quota sampling
(3	3) Judgement sampling
(4	4) Stratified sampling

Question No.	Questions		
27.	Which one of the following is not a non-parametric test ?		
	(1) t-test (2) Sign test		
	(3) Chi-square test (4) Run test		
28.	In geological studies, a dome shaped intrusion is called as :		
	(1) Volcanic neck (2) Laccolith		
•	(3) Nuee ardente (4) Caldera		
29.	The Activated Sludge Process is a wastewater treatment process		
	(1) Chemical (2) Biological		
	(3) Physical (4) Biochemical		
30.	The number of organisms of same species per unit area is		
	(1) Dispersion (2) Competition		
	(3) Density (4) Mortality		
31.	Most abundant foss.il is :		
	(1) Coal (2) Natural gas		
	(3) Oil (4) Peat		
32.	Chaparral, Maquis, Encinous, Melleseab are important areas of		
	(1) Tropical deciduous woodland		
	(2) Temperate evergreen woodland		
	(3) Tropical evergreen woodland		
((4) Temperate deciduous woodland		
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Question No.	Questions
33.	Which of the following food chain is correct ?
	(1) Phytoplankton \rightarrow Zooplankton \rightarrow Turtle \rightarrow Crabs
	(2) Phytoplankton \rightarrow Zooplankton \rightarrow Crab \rightarrow Turtle
	(3) Turtle \rightarrow Crab \rightarrow Zooplankton \rightarrow Phytoplankton
	(4) Zooplankton \rightarrow Turtle \rightarrow Crab \rightarrow Phytoplankton
34.	Two species cannot remain in same place according to
	(1) Allen's law (2) Gause hypothesis
	(3) Doll's rule (4) Weismann's theory
35.	Identify the correct pair :
	(1) Edaphic - Saline soil
	(2) Ecotope-Transition between two ecosystems
	(3) Heliophytes- Photophilic plants
	(4) Ecotone-Particular type of soil
36.]	Freshwater ecosystems are nutritionally limited by
0	1) Phosphorous and Iron
	2) Phosphorous and Carbon
	3) Iron and Nitrogen
6	4) Nitrogen and Calcium

Question No.	Questions
37.	'Threshold of Security' refers to the population level at which
	(1) The balance between parasite and host is disturbed as the host produces antibodies.
	(2) Functional response of the predator is very high.
ж.	(3) Predators no longer find it profitable to hunt for the prey species.
	(4) Parasites damage the host body but do not cause immediate mortality
38.	Which of following statements is incorrect about the enzyme complex which
	synthesizes ATP during oxidative phosphorylation ?
	(1) Its activity is not affected by un-coupler
	(2) It contains a protein channel
	(3) It is inhibited by oligomycin
	(4) It binds to molecular oxygen
39.	"Bermuda grass allergy" is a type of
0	(1) Contact allergy (2) Airborne allergy
	(3) Hydroborne allergy (4) Soilborne allergy
40. r	Which of following blotting techinque is considered more convenient, when no restriction sites are needed to be studied ?
0	1) Northern blotting (2) Dot blot
0	3) Western blotting (4) Southern blotting
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Question No.	Questions	a forma in the second secon
41.	Brown forest soil is also known as	
A. I	(1) Mollisols (2) Altisols	
	(3) Spodosols (4) Entisols	
42.	Establishment of a species in a new area is referred to as	
	(1) Ecesis (2) Aggregation	
	(3) Stabilization (4) Migration	
43.	The Zooplankton of continental shelf is generally the same as in	
	(1) Estuary region (2) Pelagic region	
	(3) Neritic region (4) Benthic region	
44.	'Mesothelioma' is caused by toxicity of	
	(1) Mercury (2) Lead	
	(3) Arsenic (4) Carbon monoxide	-
45.	A volcanic eruption will be violent if there is	
	(1) High silica and high volatiles	
	(2) High silica and low volatiles	
, Frank Star	(3) Low silica and low volatiles	
	(4) Low silica and high volatiles	
46.	Clay minerals are	
1 1 1 1 7	(1) Tectosilicates (2) Sorosilicates	
	(3) Inosilicates (4) Phyllosilicates	

Question No.	Questions
47.	In biogeochemical cycle, a chemical element or molecule moves through
·	(1) Biosphere and lithosphere
	(2) Biosphere, lithosphere and atmosphere
	(3) Lithosphere and atmosphere
	(4) Biosphere, lithosphere, atmosphere and hydrosphere
48.	Biogas produced by anaerobic bacterial activity is a mixture of
	(1) CH ₃ OH, CO ₂ , NH ₃ and H ₂ O
	(2) CO_2 , SO_2 , NO_2 , CH_4 and H_2O
	(3) H_2S , CO_2 , CO , CH_4 and LPG
	(4) CH_4 , CO_2 , NH_3 , H_2S and H_2O
	Which of the following statements about the oxidative decarboxylation of pyruvate is correct ?
	(1) The oxidative decarboxylation of pyruvate forms acetyl-CoA which i
	fed into the citric acid cycle
	(2) The oxidative decarboxylation of pyruvate formed in aerobic glycolysi occurs in the cytosol
	(3) The oxidative decarboxylation of pyruvate is catalysed by the enzymer pyruvate decarboxylase
	(4) The oxidative decarboxylation of pyruvate is reversible since there is a large decrease of free energy in the reaction

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Question No.		Questions
50.	Function of Release factor R	F2(Prokaryotes)/eRF1 (Eukaryotes) durin
	translation is to :	
· ·	(1) UAA/UGA recognition	
,	(2) Ribosome translocation	
	(3) GDP-Exchanging	
	(4) GTP-Binding	· 영상 영상 · · · · · · · · · · · · · · · ·
51.	Amount of 8-hydroxyquinolin	e (M.W. 145.16) required for preparing 100
7	ml of 5 ppm solution is :	
	(1) 1.45 mg	(2) 5 mg
	(3) 7.25 mg	(4) 14.5 mg
52.	Long term stability of a comm	unity depends on :
	(1) Biodiversity	(2) Resource partitioning
	(3) Biotic component	(4) Succession
53.	The external appearance of th	e community which may be described on th
	basis of dominant plants, der	nsity height, colour etc. of plants is know
i de f	as:	
	(1) Periodicity	(2) Phenology
	(3) Physiognomy	(4) Aspection
54.	IUCN headquarters is at :	
	(1) Paris, France	(2) Vienna, Austria
	(3) Morges, Switzerland	(4) New York, USA
	S-EE-2022 (Environmen	tal Science) Code-D

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Questior No.	Questions
55.	As compared to CO_2 , methane has global warming potential of :
	(1) 5-10 times more (2) 20-25 times more
	(3) 40-45 times more (4) 60-65 times more
56.	Laterite soil contains more of
	(1) Manganese and Silicate
	(2) Magnesium and Boron
-	(3) Iron and Aluminium
с. С	(4) Potassium and Lead
57.	Universally accepted method for isolating semivolatile organic compound
	from their matrices is
	(1) Solvent extraction (2) Double infiltration
	(3) Sedimentation technique (4) Permeation
58.	The kind of association where both the population are benefitted, but no
	essential for the survival of either population is referred to as :
	(1) Competition (2) Exploitation
	(3) Amensalism (4) Protocooperation
59.	Species diversity increases as one proceeds from
	(1) Higher to lower altitude and lower to higher latitude
	2) Lower to higher altitude and higher to lower latitude
	3) Lower to higher altitude and lower to higher latitude
	4) Higher to lower altitude and higher to lower latitude
	S-EE-2022 (Environmental Science) Code-D

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Question No.	Questions
60.	Which of the following ecosystems has the lowest net primary production per square metere ?
	(1) A grassland (2) An open ocean
	(3) A Coral reef (4) A tropical rain forest
61.	The rate of variation of population (N) with time (t) represented by equation $dN/dt = \gamma N$, follows
	(1) J-shaped curve (2) S-shaped curve
	(3) Z-shaped curve (4) Parabolic curve
62.	The soil type which is good for agriculture is
	(1) Podozols (2) Latosols
	(3) Serpent Soil (4) Solonachak
63.	Restoration of genetic diversity of a population can be obtained by :
	(1) Sexual selection
. ((2) Mutation
(3) Genetic drift
0	4) Stabilising selection
	As per Indian Standards (BIS) for drinking water desirable limit for tota hardness as CaCO ₃ is
(1) 100 mg/l (2) 200 mg/l
	$3) 300 \text{ mg/l} \qquad (4) 400 \text{ mg/l}$
ID/UR	S-EE-2022 (Environmental Science) Code-D (13)

Question No.	Questions
65.	The smokestack plumes exhibit 'coning' behaviour when
	(1) Stable atmospheric conditions exist
	(2) Atmosphere is unstable
	(3) The height of the stack is below the inversion layer
	(4) Inversion exists right from the ground surface above
66.	Among total dissolved matter in marine water, chlorine accounts for
	(1) 30% (2) 55%
	(3) 12% (4) 6%
67.	Peroxyacetyl Nitrate (PAN) is formed by oxidation of
	(i) Hydrocarbons (ii) Isoprene
	(iii) Terpene (iv) Arsenic
	Choose the correct answer from the codes :
	(1) (i) and (iv)
	(2) (ii) and (iv)
	(3) (iii) and (iv)
	(4) (i), (ii) and (iii)
68.	The evolution of genetic resistance to antibiotics among disease-carrying
	bacteria is an example of
	(1) Stabilizing natural selection
	(2) Directional natural selection
	(3) Diversifying natural selection
((4) Convergent natural selection
HD/UR	S-EE-2022 (Environmental Science) Code-D

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Question No.	Questions
69.	Beer's Law is applicable in case of :
·	(1) Heat transfer
	(2) Convection studies
	(3) Transmission of light
	(4) Photochemical reaction
70.	Anemometer is used to measure
	(1) Atmospheric pressure (2) Wind speed
	(3) Atmospheric temperature (4) Wind velocity
71.	Pleistocene represents period of
×	(1) Cold climate
	(2) Warm climate
5 d (19)	(3) Alteration of cold and warm climate with high proportion of cold period
	(4) Alteration of cold and warm climate with very high proportion of war period.
	Which of the following is a function of M cyclins (product of cdc 13 gene luring cell cycle ?
(2	
	4) Converts M form of Cdk1 to S form

(15)

Question No.	Questions
73.	Which of the following monomer did not make up DNA ?
	(1) Deoxythymidylic acid
,	(2) Deoxyguanylic acid
	(3) Deoxyuridylic acid
	(4) Deoxycytidine acid
74.	Bio-oil can be obtained from lignocellulose by
	(1) Combustion (2) Fast pyrolysis
	(3) Gasification (4) Transesterification
75.	During DNA replication, OKazaki fragments are formed on :
	(1) IImonomodiate l
	(3) Unon and I is the
76. '	
/0.	The validity period of Environmental Clearance after Environmental Impac
· 1	research is least ior
	(1) Mining projects
	2) River valley projects
	3) Harbour projects
	4) Area development projects
77. V	Vhich statement is not correct for hazardous wastes ?
. (2	1) They contain one or more of 39 toxic compounds
	2) They catch fire easily
(3	3) They are nonreactive and stable
(4	
ID/IIRS	S-EE-2022 (Environmental Science) Code-D

Question No.	Questions
78.	Right to clean environment is guaranteed in Indian Constitution by
	(1) Article 14 (2) Article 19
	(3) Article 21 (4) Article 25
79.	National Ambient Air Quality Standards for major pollutants were notifie by CPCB in
	(1) 1994 (2) 1984
- ×	(3) 2004 (4) 1974
80.	Public Liability Insurance Act came into existence in the year :
ξ Υ.,	(1) 1986 and the state of S(2) 1989 reasoning a particular second s
	(3) 1991 (4) 1995
81.	Which of the foillowing is not present in soluble state in alkaline soils ?
	(1) Potassium (2) Calcium
	(3) Nitrates (4) Phosphorous
82.	Which of the following artificial chromosome has largest carrying capacity?
	(1) BAC (2) YAC
	(3) PAC (\mathcal{Y}) (\mathcal{Y}) (\mathcal{Y}) MAC

83.	Which is the				
	Which is the correct sequence for impact assessment process in EIA ?				
	 Prediction of impacts → Identification of impacts → Description environment → Evaluation of impacts → Identification of mitigation needs. 				
	(2) Identification of impacts \rightarrow Prediction of impacts \rightarrow Evaluation impacts \rightarrow Identification of mitigation needs.				
	(3) Identification of impacts \rightarrow Description of environment \rightarrow Prediction of impacts \rightarrow Evaluation of impacts \rightarrow Identification of mitigation needs.				
	(4) Description of environment → Identification of impacts → Prediction of impacts → Evaluation of impacts → Identification of mitigation needs.				
84. 7	The most commonly used method for desalinization of water is :				
	1) Distillation (2) Reverse osmosis				
(8	3) Ion-exchange (4) Electrodialysis.				
85. W	Which of the following pertains to "high-waste approach" in dealing wit				
(1)) Composting (2) Recycling				
(3)) Burying and burning (4) Reusing				

Question No.	Questions					
86.	In most of the studies, a large sample size is anticipated to (1) Maximize the sampling error					
	(2) Get a low level of precision					
	(3) Maximize the standard deviation					
	(4) Get a high level of precision.					
87.	The geometric mean of 4, 8 and 16 is					
	(1) 9.1 (2) 4.6					
	(3) 8.0 (4) 10.2					
88.	Copper (Cu) is classified according to its geochemical affinity as :					
	(1) Chalcophile element					
	(2) Siderophile element					
	(3) Atmophile element					
	(4) Lithophile element					
89.	Which of the following is used in manufacturing flexible plastic bags and					
	sheets?					
	(1) Polyethylene terephthalate					
	2) Polystyrene					
	3) TEFLON					
. (4) Low density polyethylene					
90. V	Which one of the following is a non-formal environment education an					
a	wareness programme ?					
	(1) Environmental appreciation courses					
C	(2) Environmental Education in school system					
	(3) National Environment Awareness Campaign					
	4) Environmental Management Business Studies					

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Question No.	Questions					
91.						
	Dunes are the most spectacular land forms of ecosystem. (1) Marine (2) Depart					
	(1) Marine(2) Desert(3) Grassland(4) Forest					
92.						
	Highest level of species richness is observed in (1) Tropical rain forest					
	() = option runn lorest					
	· · · · · · · · · · · · · · · · · · ·					
	(4) Alpine pastures					
93.	The technique of extracting metal from ore bearing rock is called					
	as:					
	(1) Bio extraction					
	(2) Microbial extraction					
	(3) Bio leaching					
	(4) Bio filtration					
94.	A compound that is foreign in nature to biological system is					
	(1) Halogenated compound					
	(2) Aromatic compound					
	(3) Xenobiotic compound					
((4) Organic compound					
95. N	Which of the following is not true about II					
()	Which of the following is not true about Hatch and Slack cycle ?					
	2					
	2) Oxaloacetate is first stable product					
	3) CO_2 compensation point is very high					
	4) Thirty ATP are required for synthesis of one glucose molecule					
ID/IIR	S-EE-2022 (Environmental Science) Code-D					

Question No.	Questions							
96.	Which of the following statements about the generation of ATP electron transport chains is correct ?							
	(1) The F1 subunit of the ATP synthase contains the motor which is drive to rotate by the proton flow							
	(2) The F0 subunit of the ATP synthase binds ADP and Pi tightly before ATP synthesis occurs							
	(3) The F0 subunit of the ATP synthase contains the catalytic centre that synthesizes ATP							
	(4) The F1 subunit of the ATP synthase contains the catalytic centre tha synthesizes ATP							
97.	Chlorella species are widely used in the removal of :							
	(1) Organic waste (2) Hydrocarbons							
	(3) Heavy metals (4) All of these							
98.	Cd, Pb and Hg are nephrotoxic metals as they cause harm to organ.							
	(1) Liver (2) Kideny							
	(3) Pancreas (4) Lungs							
99.	Flood which is caused due to heavy rain or dam break within 6-12 hours of beginning of rainfall is							
	(1) River Floods (2) Flash Floods							
	(3) Lag Time Floods (4) Coastal Floods							
100.	A non directed physico chemical interaction between heavy metal ions and							
	microbial surface are called :							
	(1) Biotransformation (2) Bioconversion							
	(3) Biomining (4) Biosorption							

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