FEDERAL PUBLIC SERVICE COMMISSION
COMPETITIVE EXAMINATION-2024 FOR RECRUITMENT TO POSTS IN BS-17 UNDER THE FEDERAL GOVERNMENT
ENVIRONMENTAL SCIENCE

Roll Number

TIME ALLOWED: THREE HOURS	**(PART-I MCQs) MAXIMUM MARKS: 20**
PART-I (MCQs) : MAXIMUM 30 MINUTES	**(PART-II) MAXIMUM MARKS: 80**

NOTE: (i) First attempt **PART-I (MCQs)** on separate **OMR Answer Sheet** which shall be taken back after **30 minutes.**
(ii) Overwriting/cutting of the options/answers will not be given credit.
(iii) There is **no negative** marking. All MCQs must be attempted.

PART-I (MCQs)(COMPULSORY)

Q.1. (i) Select the best option/answer and fill in the appropriate Box ■ on the **OMR Answer Sheet.(20x1=20)**
(ii) Answers given anywhere else, other than OMR Answer Sheet, will not be considered.

1. **A wide variety of living organisms is called:**
   (A) Biodiversity (B) Population (C) Habitat (D) None of these
2. **What percentage of oxygen and carbon dioxide exists in the ecosystem?**
   (A) 20.95% and 0.004% (B) 20.95% and 0.04% (C) 20.0% and 0.40% (D) None of these
3. **The set of ecosystems is called:**
   (A) Atmosphere (B) Hydrosphere (C) Biome (D) None of these
4. **Acid rain is a result of:**
   (A) Excess amount of CO_2 (B) Excess amount of NH_3
   (C) Excess amount of SO_2 and NO_2 (D) None of these
5. **The greenhouse effect in the atmosphere is produced due to:**
   (A) Absorption and re-emission of infrared radiation by the atmosphere
   (B) Absorption and re-emission of ultra violet radiation by the atmosphere
   (C) Absorption and re-emission of visible light by the atmosphere (D) None of these
6. **The result of acid disposition is:**
   (A) Dying forests and lakes (B) Acid indigestion in humans (C) Greenhouse effect (D) None of these
7. **Biotic component of the environment does not include:**
   (A) Micro-organism system (B) Plant and Animal system (C) Soil system (D) None of these
8. **Of the following agents, the one that would not favor conversion of sulfur dioxide to sulfate species in the atmosphere is:**
   (A) Ammonia (B) Water (C) Sunlight (D) None of these
9. **The pH of the atmosphere is:**
   (A) Acidic (B) Basic (C) Neutral (D) None of these
10. **An association has been found between exposure to _____by the inhalation route and lung cancer.**
    (A) Lead (Pb) (B) Chromium (C) Barium (D) None of these
11. **NEQ was approved on:**
    (A) 1992 (B) 1993 (C) 1995 (D) None of these
12. **The "Ramsar Convention" is an international treaty for the conservation and protection of:**
    (A) Endangered species (B) Biodiversity (C) Wetlands (D) None of these
13. **A mutual relationship between two organisms, where both of them are benefitting from watching the other is called:**
    (A) Mutualism (B) Symbiosis (C) Parasitism (D) None of these
14. **_____ often serve as indicator for a threatened ecosystem.**
    (A) Abundant species (B) Endangered species (C) Threatened species (D) None of these
15. **Mangrove forests in Asia are largely concentrated in:**
    (A) Pakistan (B) Indonesia (C) Malaysia (D) None of these
16. **An individual may die within 2-10 days after exposure to 500 ppm of the following air pollutant:**
    (A) CO_2 (B) NO (C) SO_2 (D) None of these
17. **_____is the increasing concentration of toxic substances in organisms as trophic levels increase in a food chain or food web.**
    (A) Bio-magnification (B) Bio-concentration (C) Bio-accumulation (D) None of these
18. **What is the order of waste management hierarchy, from most to least favoured?**
    (A) Prevention- Recycle-Reuse- Disposal (B) Prevention-Reuse-Disposal-Recycle
    (C) Prevention-Reuse-Recycle-Disposal (D) None of these
19. **Which gas produced in open dumps from the anaerobic decomposition of biodegradable waste?**
    (A) Ethane (B) Methane (C) Propene (D) None of these
20. **Pakistan is divided into _____agro-ecological zones.**
    (A) 8 (B) 10 (C) 12 (D) None of these

PART-II

NOTE: (i) **Part-II** is to be attempted on the separate **Answer Book.**
(ii) Attempt **ONLY FOUR** questions from **PART-II**. **ALL** questions carry **EQUAL** marks.
(iii) All the parts (if any) of each Question must be attempted at one place instead of at different places.
(iv) Write Q. No. in the Answer Book in accordance with Q. No. in the Q.Paper.
(v) No Page/Space be left blank between the answers. All the blank pages of Answer Book must be crossed.
(vi) Extra attempt of any question or any part of the question will not be considered.

Q. No. 2. What is the mechanism of ozone depletion? What chemicals in upper atmosphere are responsible for ozone layer depletion? What are the impacts of ozone layer depletion? **(20)**

Q. No. 3. What is the difference between an Environmental Impact Assessment (EIA) and an Initial Environmental Examination (IEE)? List and explain the entire EIA process. Where in the project cycle should an EIA be initiated? **(20)**

Q. No. 4. One of the methods to control pollution problem is introduction of regulatory mechanisms, incentives and fines. In your opinion how can we control the smog problem by using one of those methods? How would you implement a plan at a city level to mitigate the smog problem? **(20)**

Q. No. 5. What is green house effect? What is the mechanism of green house effect? Which major air pollutants are responsible for causing global warming? Why is Pakistan considered more vulnerable to the effects of climate change when its contribution is less than 1% in total global GHG emissions? **(20)**

Q. No. 6. Discuss important components of Pakistan's National Climate Change Policy. What is the impact of 18th amendment on Climate change Policy formulation in Pakistan? How Pakistan can benefit from COP28? **(20)**

Q. No. 7. What is occupational health safety and management? Provide examples of at least five work places with possible associated exposure risks. How can such exposure risks be minimized/ controlled? **(20)**

Q. No. 8. Write short notes on any two of the following: **(10 each)** **(20)**

a. United Nation Framework Convention on Climate Change (UNFCCC)

b. Kyoto Protocol

c. Eutrophication and its effects

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