



FEDERAL PUBLIC SERVICE COMMISSION
COMPETITIVE EXAMINATION-2023
FOR RECRUITMENT TO POSTS IN BS-17
UNDER THE FEDERAL GOVERNMENT
ENVIRONMENTAL SCIENCE

Roll Number

TIME ALLOWED: THREE HOURS PART-I(MCQS): MAXIMUM 30 MINUTES	PART-I (MCQS) MAXIMUM MARKS = 20 PART-II MAXIMUM MARKS = 80
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.	

PART-II

- Q. No. 2.** Discuss in detail the salient features of Pakistan environmental protection act 1997. **(20)**
- Q. No. 3.** Discuss in detail the climate mitigation and adaptation strategies keeping in view the climate change risk index of Pakistan. **(20)**
- Q. No. 4.** What are the effects of Environmental Pollution and Habitat loss on Global Diversity? Explain in detail. **(20)**
- Q. No. 5.** What are sustainable approaches for solid waste management? **(20)**
- Q. No. 6.** What are the main causes of Biodiversity loss? How can we protect and preserve Biodiversity? **(20)**
- Q. No. 7.** What is sustainable development? Describe its goals and why it is often associated with protecting the environment? **(20)**
- Q. No. 8.** Write notes on any TWO of the following: **(10 each) (20)**
- (i)** Kyoto Protocol
 - (ii)** Geographic Information and Remote Sensing
 - (iii)** Occupational Health and Safety Management System



**FEDERAL PUBLIC SERVICE COMMISSION
COMPETITIVE EXAMINATION-2016
FOR RECRUITMENT TO POSTS IN BS-17
UNDER THE FEDERAL GOVERNMENT**

Roll Number

ENVIRONMENTAL SCIENCES

TIME ALLOWED: THREE HOURS	PART-I (MCQS)	MAXIMUM MARKS = 20
PART-I(MCQS): MAXIMUM 30 MINUTES	PART-II	MAXIMUM MARKS = 80
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) Candidate must 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 attempted question will not be considered.		

PART-II

- Q. No. 2.** What is the Importance of the Report “Our Common Future” in the history of Environmental Movement? What common threats were identified in the report and what measures were suggested for the sustainability of the earth system? **(20)**
- Q. No. 3.** Discuss in detail the Environmental Implications of Demographic factors. Elaborate the consequences of each Environmental Implication. **(20)**
- Q. No. 4.** Do you believe that Genders play their roles differently in Environmental Management and Conservation? Discuss in detail the concept of “Ecofeminism” from international and national perspective taking into consideration the gendered rights to resources. **(20)**
- Q. No. 5.** How Technological Development leads to Climate Change and consequent change in Natural and Societal Systems? Also furnish possible adaptation options to Climate Change. **(20)**
- Q. No. 6.** What are the salient features of the Environmental Policy of Pakistan? Discuss if pertinent laws and institutions are existent and justifiably effective. **(20)**
- Q. No. 7.** What are salient requirements of the United Nations Framework Convention on Climate Change? Why there was a need for supplementary Kyoto Protocol? Elaborate the controversies associated with the protocol. **(20)**
- Q. No. 8.** Write short notes on any FOUR of the following: **(5 each) (20)**
- | | |
|---------------------------------------|--------------------------------------|
| (a) CDM | (b) Genetic Pollution |
| (c) Impacts of Noise Pollution | (d) Causes of Desertification |
| (e) Carbon Sequestration | (f) Urban Heat Island Effect |

**FEDERAL PUBLIC SERVICE COMMISSION
COMPETITIVE EXAMINATION-2022
FOR RECRUITMENT TO POSTS IN BS-17
UNDER THE FEDERAL GOVERNMENT**

ENVIRONMENTAL SCIENCE

Time Allowed:	THREE HOURS	PART-I (MCQS)	MAXIMUM MARKS = 20
PART-I (MCQS):	MAXIMUM 30 MINUTES	PART-II	MAXIMUM MARKS = 80

- 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 blank pages of Answer Book must be crossed
(vi) Extra attempt of any question or any part of the question will not be considered

PART-II

- Q2. Why are environmentalists are interested in wetlands? Describe various mechanisms for sustainable management of wetlands in Pakistan.
- Q3. Write in detail the history and main features of the Indus Water Treaty with a special focus on its significance in the current scenario of water stress in Pakistan.
- Q4. What is anaerobic degradation? Describe the four key stages in the anaerobic degradation of organic waste.
- Q5. What are the potential environmental impacts of China Pakistan Economic Corridor (CPEC)?
- Q6. If the population of the top carnivores declines, what will happen to the landscape ecosystems?
- Q7. What is the ozone layer? Explain its depletion resulting from the atmospheric NO, H, OH, and Cl.
- Q8. Write short notes on any FOUR of the following:
1. GIS and RS
 2. Biodiversity loss
 3. Atmospheric smog
 4. Population
 5. Air Pollution
 6. Green House Gases



FEDERAL PUBLIC SERVICE COMMISSION
COMPETITIVE EXAMINATION-2021
FOR RECRUITMENT TO POSTS IN BS-17
UNDER THE FEDERAL GOVERNMENT
ENVIRONMENTAL SCIENCE

Roll Number

TIME ALLOWED: THREE HOURS PART-I(MCQS): MAXIMUM 30 MINUTES	PART-I (MCQS) PART-II	MAXIMUM MARKS = 20 MAXIMUM MARKS = 80
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.		

PART-II

- Q. No. 2.** Define risk analysis. Discuss the four steps of risk analysis used by EPA. (20)
- Q. No. 3.** How can biotechnology, bioengineering and the increasing use of genetically modified organisms help us to deal with increasing food demands. (20)
- Q. No. 4.** How will you define Biodiversity? What is meant by the instrumental and intrinsic value of species? Why biodiversity is decreasing? Discuss different factors of biodiversity loss. (20)
- Q. No. 5.** Explain the phenomenon of global warming. Which of the greenhouse gases are the most significant contributors to global warming? What steps could be taken to stabilize the greenhouse gas content of the atmosphere? (20)
- Q. No. 6.** Discuss the Montreal Protocol and its subsequent amendments. (20)
- Q. No. 7.** Define Eutrophication. Explain the difference between natural and cultural eutrophication. Discuss the methods of combating Eutrophication. (20)
- Q. No. 8.** Write notes on any TWO of the following: (10 marks each) (20)
(i) Carrying capacity
(ii) GIS
(iii) E-waste



FEDERAL PUBLIC SERVICE COMMISSION
COMPETITIVE EXAMINATION-2020
FOR RECRUITMENT TO POSTS IN BS-17
UNDER THE FEDERAL GOVERNMENT
ENVIRONMENTAL SCIENCE

Roll Number

TIME ALLOWED: THREE HOURS PART-I(MCQS): MAXIMUM 30 MINUTES	PART-I (MCQS) PART-II	MAXIMUM MARKS = 20 MAXIMUM MARKS = 80
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.		

PART-II

- Q. No. 2.** (a) Write the main principles of Rio Summit 1992. (10)
(b) Discuss the dose response relationship in Environmental Toxicology. (10) **(20)**
- Q. No. 3.** (a) Write the physico chemical parameters of waste water and also explain waste water treatment technologies. (10)
(b) Discuss the major outcomes of Clean Development Mechanisms (CDM). (10) **(20)**
- Q. No. 4.** (a) Discuss in detail the Hospital Waste Management codes of Practice. (10)
(b) Enlist the conventions and treaties passed in Agenda 21. (10) **(20)**
- Q. No. 5.** (a) Define and explain the Eutrophication of water body. (10)
(b) What are technological approaches to Environmental management? (10) **(20)**
- Q. No. 6.** (a) What are main steps of conduction Environmental Impact Assessment (EIA)? (10)
(b) Discusses briefly noise pollution. (10) **(20)**
- Q. No. 7.** (a) What is green revolution? Give a brief account of green revolution in Pakistan. (10)
(b) Define Environmental Economics and explain briefly the interrelationship between Environment and Economics. (10) **(20)**
- Q. No. 8.** (a) Discuss the solid waste disposal technique. (10)
(b) Write in detail the effect of climate change on natural and societal systems. (10) **(20)**



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 CO₂ (B) Excess amount of NH₃
(C) Excess amount of SO₂ and NO₂ (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) CO₂ (B) NO (C) SO₂ (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



FEDERAL PUBLIC SERVICE COMMISSION
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ENVIRONMENTAL SCIENCE

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PART-I(MCQS): MAXIMUM 30 MINUTES	PART-II	MAXIMUM MARKS = 80
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.		

PART – II

- Q. No. 2.** How is hazardous waste classified? What are the various options for handling hazardous waste? (20)
- Q. No. 3.** What are the various mechanisms involved in atmospheric SO₂ removal? (20)
- Q. No. 4.** Eutrophication is a phenomena caused by the abnormal growth of algae in a water body. What are the reasons of algal bloom and how can this phenomenon be controlled? (20)
- Q. No. 5.** Describe and differentiate between stated and revealed preferences methods used for valuing the environmental resources. (20)
- Q. No. 6.** What is the importance of public participation in an Environmental Impact Assessment (EIA) process? What is the difference between EIA and Strategic Environmental Assessment (SEA)? (20)
- Q. No. 7.** Pakistan is located in a semi arid region of the world, hence is more prone to climate change effects. Explain what adaptation measures will be feasible in the situations of worst climate change in regions like Pakistan? (20)
- Q. No. 8.** What are the five major air pollutants coming out of fire burning process? Smog formation occurs due to certain air pollutants. What means and ways can be used for its control? (20)



**FEDERAL PUBLIC SERVICE COMMISSION
COMPETITIVE EXAMINATION-2018
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ENVIRONMENTAL SCIENCE

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PART-I(MCQS): MAXIMUM 30 MINUTES	PART-II	MAXIMUM MARKS = 80
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) Candidate must 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 attempted question will not be considered.		

PART – II

- Q. No. 2 (a) Write a detail note on Alternative Energy Resources. (10)
(b) What are the Environmental Impacts on food production? (10) **(20)**
- Q. No. 3 (a) What are the events that triggered the interest in bioremediation? (07)
(b) What are different steps in anaerobic treatment for biogas generation? (07)
(c) Write a note on Environmental Geology. (06) **(20)**
- Q. No. 4 What is meant by smog? Explain the main causes of smog in Punjab. Summarise the effect of key meteorological factors on dispersion of pollutants in the atmosphere. (20) **(20)**
- Q. No. 5 (a) Elaborate the concept of greenhouse effect and its importance to global climate. (08)
(b) What are drivers and indicators of Climate Change and how they effects the natural and societal system. (12) **(20)**
- Q. No. 6 (a) What are the key factors of National Climate Change Policy 2012? (10)
(b) Write a brief note on National Drinking Water Policy 2009. (10) **(20)**
- Q. No. 7 (a) Discuss Briefly some Common Types Occupational Health & Safety Hazards. (05)
(b) Give a brief about Environmental Impact Assessment (EIA) procedural stages? In the context of EIA, what type of information is gathered when establishing a baseline? (15) **(20)**
- Q. No. 8 Write short notes on any **FOUR** of the Following: (05 each) **(20)**
(a) Wetlands (b) Carbon Footprints
(c) Ozone Depletion (d) REDD+
(e) Desertification (f) GIS & Remote Sensing



**FEDERAL PUBLIC SERVICE COMMISSION
COMPETITIVE EXAMINATION-2017
FOR RECRUITMENT TO POSTS IN BS-17
UNDER THE FEDERAL GOVERNMENT**

Roll Number

ENVIRONMENTAL SCIENCES

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

- Q. No. 2.** (A) How the hazardous material is defined, identified and differentiated from the toxic material? Explain the environmental problems and health risks linked with the hazardous waste. (10) **(20)**
(B) What stands for CERCLA and why it is related with hazardous waste? (10)
- Q. No. 3.** Which of the GHGs are the most significant contributors to the global warming? How do they work? And what mitigation steps could be taken to stabilize the GHG content of the atmosphere? **(20)**
- Q. No. 4.** (A) Discuss the global efforts that are currently in place to protect our ozone shield. What evidence is there that such efforts have been effective? (12) **(20)**
(B) Discuss and comment on the social and economic dimensions of Agenda 21. (8)
- Q. No. 5.** Trace the political history of UNFCCC and the Kyoto Protocol. Do you think that the UNFCCC (2015) conference in Paris was the next step in reaching an agreement on climate change? **(20)**
- Q. No. 6.** (A) What do you understand by climate and microclimate? (4) **(20)**
(B) How do forest burning and land clearing affect the global climate? (8)
(C) What impact would changing climate have on the 'ecosystem in general' and 'coastal environment in particular'? (8)
- Q. No. 7.** (A) What is genetic engineering or biotechnology and how it may affect the agriculture and the environment? (12) **(20)**
(B) What is the relation between poverty and food security? (8)
- Q. No. 8.** Write short notes on any FOUR of the following: **(5 each) (20)**
(a) E-waste (b) Superfund
(c) Eutrophication (d) Carbon foot print
(e) Smog (f) Energy from biomass
