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BSc. Hons. Chemistry (FYUP), Chemistry
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Paper code: BCH-MIC 601
Title: INDUSTRIAL POLLUTANTS AND ENVIRONMENT
(Write your Roll No. at the top immediately on receipt of this question paper)

Time: **2½ hours** Maximum Marks: **60**

Note: ***Attempt all the questions marks of each question given in parenthesis. All parts of a question must be attempted in continuation. Start answer of a fresh question on a new page. Cite examples and draw labelled diagrams wherever necessary.***

Q. No.		BTL	CLO	PLO
	SECTION A			
Very Short Type Questions (Attempt all):		**(1.5x10=15 marks)**		
A1	The three major fossil fuels are _____, _____, and _____.	1/2	1/2	1/2
A2	The major disadvantage of wind energy is its _____ nature, as it depends on wind speed.	1/2	1/2	1/2
A3	_____ is an alternative to gasoline derived from plant-based sources like sugarcane and corn.	1/2	1/2	1/2
A4	The _____ effect is responsible for trapping heat in the Earth's atmosphere, leading to climate change.	1/2	1/2	1/2
A5	_____ energy is considered the cleanest and most sustainable energy source, as it directly converts sunlight into electricity.	1/2	1/2	1/2
A6	Oxygen is mainly produced on a large scale by the _____ of liquid air.	1/2	1/2	1/2
A7	Nitrogen is used in the chemical industry for the synthesis of _____.	1/2	1/2	1/2
A8	Argon is an _____ gas commonly used in welding.	1/2	1/2	1/2
A9	The main source of helium gas is _____ gas deposits.	1/2	1/2	1/2
A10	Hydrogen is highly _____ and requires careful storage and handling.	1/2	1/2	1/2
A11	The main purpose of tertiary treatment in wastewater processing is to remove _____ and harmful substances.	1/2	1/2	1/2
A12	_____ is the process of separating large solids such as plastics and wood from wastewater at the preliminary treatment level.	1/2	1/2	1/2
A13	In biological wastewater treatment, the two major processes are _____ and anaerobic treatment.	1/2	1/2	1/2
A14	The activated sludge process is an example of a _____waste water treatment method.	1/2	1/2	1/2
A15	The final stage of wastewater treatment that improves water quality before reuse or discharge is called _____.	1/2	1/2	1/2
	SECTION B			
Long Type Questions (Attempt any two out of four):		**(10x2=20 marks)**		
B1	Explain the formation and harmful effects of photochemical smog. How can it be analyzed?	5/6	5/6	5/6/7
B2	What are the various refining methods used in metallurgy? Explain their significance.	5/6	5/6	5/6/7

B3	What is sludge, and how is it managed?	5/6	5/6	5/6/7
B4	What are the causes, effects, and management strategies of nuclear disasters?	5/6	5/6	5/6/7
	SECTION C			
Short Type Questions (Attempt all Questions):			**(5x5=25 marks)**	
C1	Discuss the greenhouse effect and its role in global warming. What are its causes and preventive measures? **OR** What are the major challenges of nuclear waste disposal and how can they be managed?	5/6	5/6	5/6/7
C2	What are air pollutants? Classify them with examples and discuss their sources and effects. **OR** Compare the properties and industrial applications of potash alum and chrome alum.	4/5/6	4/5/6	4/5/6
C3	What are the key steps involved in tidal energy generation, and what are its pros and cons? **OR** Explain the industrial production and uses of nitric acid. What precautions are necessary for its handling?	5/6/7	4/5/6	4/5/6
C4	What are the different levels of wastewater treatment? Explain each. **OR** Describe the large-scale production, uses, and hazards associated with oxygen gas.	3/4/5	3/4/5/6	3/4/5
C5	Discuss the chemical properties, industrial applications, and handling safety of potassium permanganate. **OR** Explain the importance of ultrapure metals in semiconductor technology and describe their preparation methods.	3/4/5	3/4/5	3/4/5