



**NATIONAL OFFICERS ACADEMY**  
**Mock Exams Special CSS & CSS-2024**  
**August 2023 (Mock-5)**  
**GENERAL KNOWLEDGE-I**  
**GENERAL SCIENCE AND ABILITY**

<b>TIME ALLOWED: THREE HOURS</b>	<b>PART-I (MCQS)</b>	<b>MAXIMUM MARKS = 20</b>
<b>PART-I(MCQS): MAXIMUM 30 INUTES</b>	<b>PART-II</b>	<b>MAXIMUM MARKS = 80</b>

**NOTE:**

- i. Part-II is to be attempted on the separate Answer Book.**
- ii. Attempt ONLY FOUR questions from PART-II by selecting TWO questions from EACH SECTION. ALL questions carry EQUAL marks.**

**PART-II**  
**(SECTION-A)**

**Q. No. 2**

- a. What is octet rule in chemical in chemical bonding? Explain covalent bond in detail.
- b. Why water molecule is angular in structure?
- c. Write a note on structure and functions of Human Brain.
- d. Describe the 'Cell Structure'. Write down the functions of at least three Subcellular Organelles.

**Q. No. 3**

- a. What is Polio? What are the causes and the symptoms of polio? Differentiate between IPV and OPV.
- b. Name the two parts of the Nervous System? Briefly describe CNS. Describe Alzheimer Disease.
- c. Carbohydrates are the major source of energy for the cells. Describe their structure, function and classification.
- d. Discuss importance of preservatives and antioxidants in food.

**Q. No. 4**

- a. What is solid waste management? What is the National Solid Waste Management Strategy in Pakistan? Suggest methods to improve the abysmal situation of SWM in Pakistan.
- b. What is GIS? What are the components of GIS?
- c. Pakistan is the fifth most populous country of the world. What are the causes of population explosion in Pakistan? What can be the control measures?
- d. What are Montreal and Kyoto protocols? What is carbon market?

**Q. No. 5**

- a. Write a note on Networking & Internet Standards.
- b. What is 'Artificial Intelligence'? Write its pros and cons.
- c. How is an 'Optical Fiber' constructed? How is it helpful in transmitting the electromagnetic radiations?
- d. Write a comprehensive note on 'Bioavailability of Nutrients.

**(SECTION-B)**

**Q. No. 6**

- a. Divide \$370 into three parts such that second part is  $\frac{1}{4}$  of the third part and the ratio between the first and the third part is 3: 5. Find each part.
- b. Kashif required Rs. 800 for paying his fees. He borrowed 20 % from his brother and 30 % of the remaining was funded by his mother. In his bank he had Rs. 200. How much more does he need (in Rs.)?
- c. Three bags contain 3 red, 7 black; 8 red, 2 black, and 4 red & 6 black balls respectively. 1 of the bags is selected at random and a ball is drawn from it. If the ball drawn is red, find the probability that it is drawn from the third bag.

- d. The traffic lights at three different road crossings change after every 24 sec., 36 sec. and 72 sec. respectively. If they all change simultaneously at 8 : 20 : 00 hrs; at what time will they again change simultaneously?

**Q. No. 7**

- a. Ishaq can do a tailoring job in 6 hours. Abbas does the same job in 4 hours. Irfan does it in 8 hours. Ishaq and Abbas start doing the work. Abbas leaves after 2 hours and Irfan replaces him. How long would it take to complete the work?
- b. A farmer needs to build a boundary wall around his farm. If the area of the farm is  $576\text{m}^2$ , what will be the area of the wall, if it's 2 meters high on 3 sides and 3 meters high on one side?
- c. There are 7 students in a group having ages 18, 18, 19, 19, 19, 21, 21. Calculate the mean, median, mode and range of their ages. Also, define these mentioned terms.
- d. How does a mental ability skill differ from IQ test?

**Q. No. 8**

- a. A car runs at a speed of 40 km/h during first half of the journey and at the speed of 60km/h the 2nd half of journey. What is the average speed of a car?
- b. If ROSE is coded as 6821 CHAIR is coded as 73456, PREACH is coded as 961473, what will be code for SEARCH?
- c. If A is the brother of B and B is the sister of C, C is the father of D. How D is related to A, D being a male member?
- d. Kashmala travels 35 km towards the west, takes a right turn and travels 50 km more next, she takes another right turn and travels 35 km in that direction. How far is she from her original position?

**\*\*\*\*\* We wish you Good Luck for Special CSS & CSS-2024\*\*\*\*\***