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 by selecting TWO questions from EACH SECTION. ALL questions carry EQUAL marks.**

PART-II
SECTION-I

Q. No. 2
   a. Artificial Intelligence has revolutionized the world. Comment.
   b. It is said that we never know the worth of water till the well is dry. Suggest few measures to deal with the issues of water scarcity.
   c. What is a vaccine? Elaborate the different types of vaccines. In how much time, do you think that the world population will have to get administered by the booster vaccines for curbing the chances of getting Covid-19?
   d. Show diagrammatically; how an ionic and a covalent bond is formed.

Q. No. 3
   a. What are the five stages of disaster risk management cycle? Are these stages properly followed in Pakistan?
   b. What are the main weather variables and how do they effect the weather variation?
   c. What are some of the applications of ceramics in everyday life?
   d. Why is it necessary to maintain a balanced diet? What are the essentials for maintaining Balanced Diet?

Q. No. 4
   a. Draw and explain the structure of Ear. Also label its parts.
   b. On which principles do fiber optics work? Enlist the different types of fiber optics.
   c. Why is mitochondrion called the powerhouse of the cell?
   d. Food Deterioration can be a result of food adulteration. What are some of the remedial measures to curb this menace in Pakistan?

Q. No. 5
   a. What is meant by essential fats? Write down the different types of fat.
   b. Briefly explain the Water Cycle.
   c. Write down the names of a few diseases caused by a virus and bacteria; mentioning the name of virus/bacteria and disease caused by them.
   d. What are the benefits attributed to the increasing use of Solar Panels?

SECTION-II

Q. No. 6
   a. Divide $370 into three parts such that second part is 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. One morning after sunrise, Sara was standing facing a pole. The shadow of the pole was forming on the left side. Which direction was Sara facing?

b. A can do a piece of work in 10 days, and B can do the same work in 20 days. With the help of C, they can finish the work in 4 days. In how many days can C do the work alone?

c. For 9 innings, Rohan has an average of 65 runs. In the tenth inning, he scores 200 runs, thus increasing his average. How many runs was his average increased by?

d. In a certain code language, if 'FROZEN' is coded as 'OFAPSG'. How will 'MOLTEN' be written in the same language?

Q. No. 8

a. In a survey of 500 students at a college, it was found that 49% liked watching football, 53% liked watching hockey and 62% liked watching basketball. Also, 27% liked watching football and hockey both, 29% liked watching basketball and hockey both and 28% liked watching football and basketball both. 5% liked watching none of these games.

    i. How many students like watching all the three games?
    ii. Find the ratio of number of students who like watching only football to those who like watching only hockey.
    iii. Find the number of students who like watching only one of the three given games.

b. Divide Rs. 500 among Arham, Maryam and Sarim so that Arham gets 2/3 of what Maryam gets and Maryam gets ¼ of what Sarim gets. Find the share of each.

c. Ten years ago, the age of mother was three times the age of her son. After ten years, mother's age will be twice that of his son. Find their present ages.

d. Find the missing numbers in the given series:
    i. 2, 3, 10, ? , 172
    ii. 4, 6, 12, 30, 90, ? ,1260
    iii. 5, 16, 49, 104, ?
    iv. 11, 14, 20, 29, ? , 56
    v. 22, 21, 23, 22, 24, 23, ...

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We wish you Good Luck for CSS-2022 !