

- a. What is ...
- 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.

Total: \$370

second = $\frac{1}{4}$ of 3rd

ratio 1st to 3rd = 3:5

Sol:

$$\text{Share A} = \frac{\text{Total am.}}{\text{Total ratio}} \times \text{Ratio of A}$$

$$A = \frac{370}{9.25} \times 3 = 120$$

Total ratio: $3+5 + (\frac{1}{4} \times 5)$

$$3+5 + \frac{5}{4} = \frac{37}{4} = 9.25$$

$$C = 200$$

$$A + C = 200 + 120 = 320$$

$$\text{now } 370 - 320 = 50$$

$$A = 120, B = 50, C = 200$$

B is $\frac{1}{4}$ of C (5:200)