



# FEDERAL PUBLIC SERVICE COMMISSION

## COMPETITIVE EXAMINATION-2021

### FOR RECRUITMENT TO POSTS IN BS-17

### UNDER THE FEDERAL GOVERNMENT

### GENERAL KNOWLEDGE-I (GENERAL SCIENCE & ABILITY)

Roll Number

TIME ALLOWED: THREE HOURS	PART-I (MCQS)	MAXIMUM MARKS = 20
PART-I(MCQS): MAXIMUM 30 MINUTES	PART-II	MAXIMUM MARKS = 80
<b>NOTE:</b> (i) Part-II is to be attempted on the separate Answer Book. (ii) Attempt <b>ONLY FOUR</b> questions from PART-II by selecting <b>TWO</b> questions from <b>EACH SECTION</b> . <b>ALL</b> questions carry <b>EQUAL</b> 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. (vii) <b>Use of Calculator is not allowed.</b>		

#### PART – II (SECTION – A)

- ✓ Q. 2. (a) Differentiate between a star and a planet. What is the magnitude of a star and how the color of stars is correlated with their temperatures? (5)
- (b) "Semiconductors are the Brains of Modern Electronics". Explain in detail what this quotation means. (5)
- (c) Briefly describe the most popular and accepted theory about the origin of the Universe. (5)
- (d) What are the advantages and limitations of renewable energy resources? Briefly explain the prospects of non-conventional energy resources in Pakistan. (5)(20)
- ✓ Q. 3. (a) Explain with examples the relationship between cells, tissues and organs. (5)
- (b) Explain the differences in structure & function between a cell wall and a cell membrane. (5)
- (c) What is meant by transpiration? Explain in detail the significance of leaf structure in the process of transpiration. (5)
- (d) What is meant by the term double circulation? Briefly describe how the heart is adapted to keep blood flowing in a double circulation. (5)(20)
- Q. 4. (a) What is the sequence of strata of atmosphere and on what factors does it depends? (5)
- (b) Describe water cycle and briefly explain the major processes involved in water cycle? (5)
- (c) What is the Difference between asthenosphere and lithosphere? Explain various components of lithosphere. (5)
- (d) Differentiate between food contaminants and food adulterants. (5)(20)
- Q. 5. (a) Define the term "malnutrition". Elaborate its major causes and consequences. (5)
- (b) Explain how a slice of bread after few days decomposes due to the growth of fungi. (5)
- (c) What is a computer memory? Describe its units and discuss various types of memories. (5)
- (d) Differentiate between natural and artificial satellites. Briefly describe the working of communication satellites with some applications. (5)(20)

#### (SECTION – B)

- Q. 6. (a) A man is now 3 times as old as his son. In ten (10) years time, the sum of their ages will be 76. How old was the man when his son was born? (5)
- (b) How many tiles of  $20\text{cm}^2$  will be required to have a footpath 1m wide carried around the outside of grassy plot 24m long and 14m broad? (5)
- (c) Mr. Faheem has dinner with his family at a restaurant which offers a 10% discount on food. The marked price of the food that they order was Rs.15000/-. Given that there was a service charges of 10% and GST is 17%, calculate the total amount of money he has to pay. (5)
- (d) Mr. Khawaja walked for 45 minutes at the rate of 3km/h and then ran for an hour at a certain speed. At the end of that time he was 6km away from the starting point. How fast did he run? (5)(20)

## GENERAL KNOWLEDGE-I (GENERAL SCIENCE & ABILITY)

Q. 7 (a) A child went 90m towards East, and then he turned Right and went 20m. Subsequently he turned Right and after going 30m he reached his uncle's house. From there he went 100m to his North. Determine how far he is from his starting point. (5)

(b) The average of 11 numbers is 63, that of the first 6 numbers are 60 and that of the last 6 numbers are 65. Find the 6<sup>th</sup> number. (5)

(c) The following table shows some values of 'x' and the corresponding values of 'y' where,  $y = x^3 - 3x - 10$ . (5)

x	-3	-2	-1	0	1	2	3	4
y	-28			-10			8	42

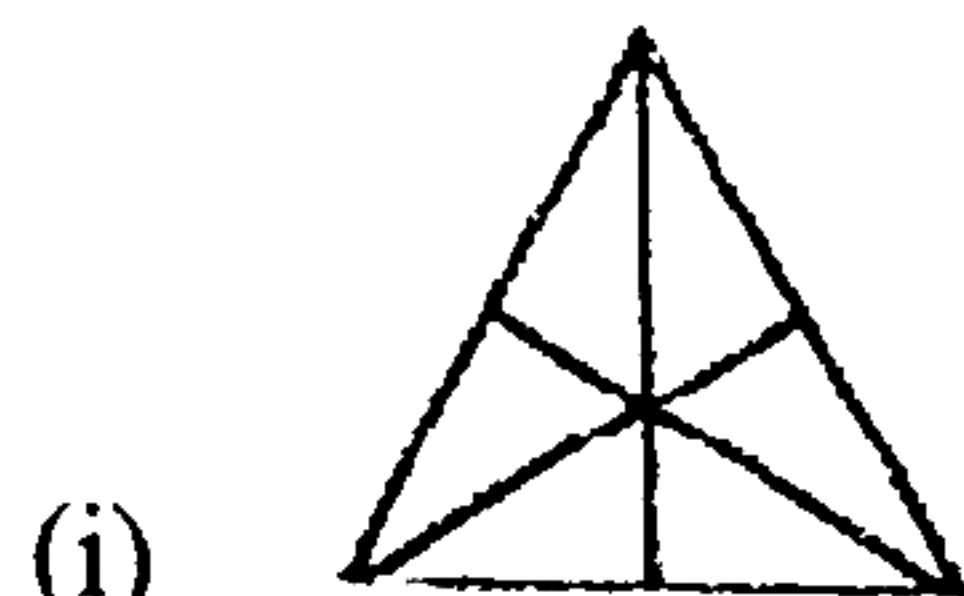
Complete the table and draw a graph between 'x' and 'y' to find the value of 'y' when  $x=1.8$  and value of 'x' when  $y=10$ .

(d) Mr. Raheel invests Rs.60000/- in an account that earns simple interest. At the end of 5 years, the investment is worth Rs.85000/-. Calculate the rate of simple interest per year. (5)(20)

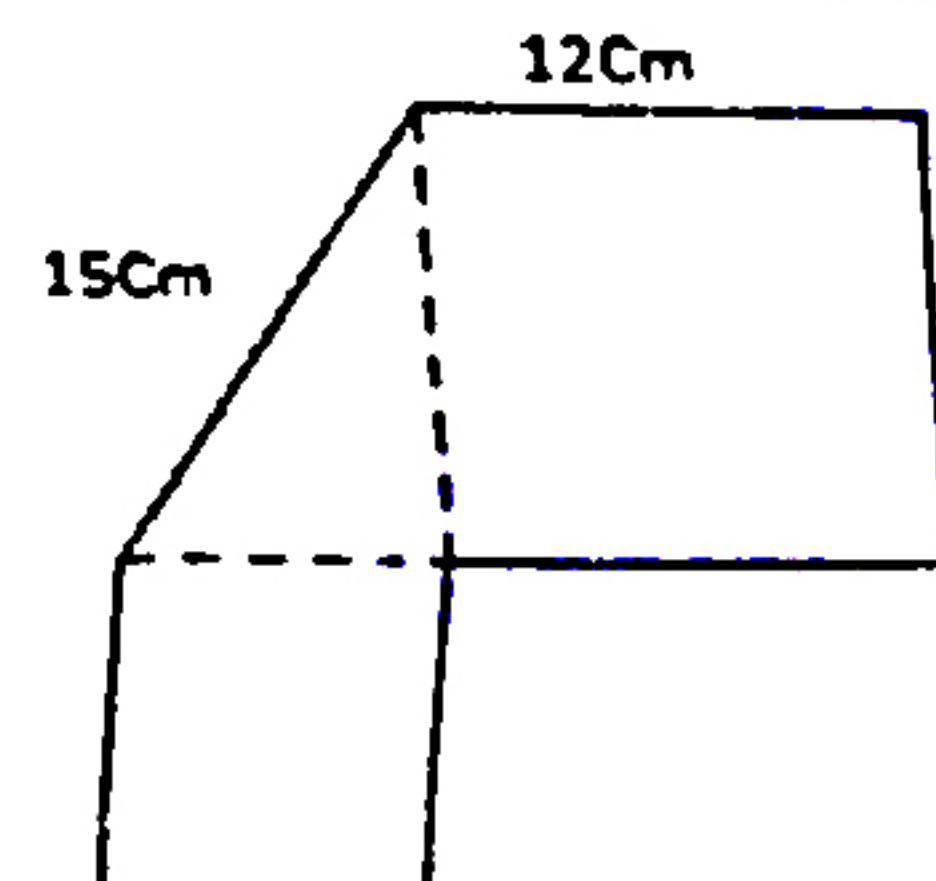
Q. 8. (a) Find out the correct word from the given jumbled spellings. (5)

(i) UORSEIS (ii) REGAHT (iii) TYLEAL (iv) RAMYR (v) RYUHR

(b) Find the number of triangles in the following two images. (5)



(c) Calculate the total area and perimeter of the given shape. (5)



(d) Find the missing numbers in the given series. (5)(20)

(i) 4, 18, ?, 100, 180, 294

(ii) 15, 31, 63, 127, ?

(iii) 1, 8, 27, 64, 125, ?

(iv) 132, 156, ?, 210, 240,

(v) 8, 24, 12, 36, 18, 54, ?