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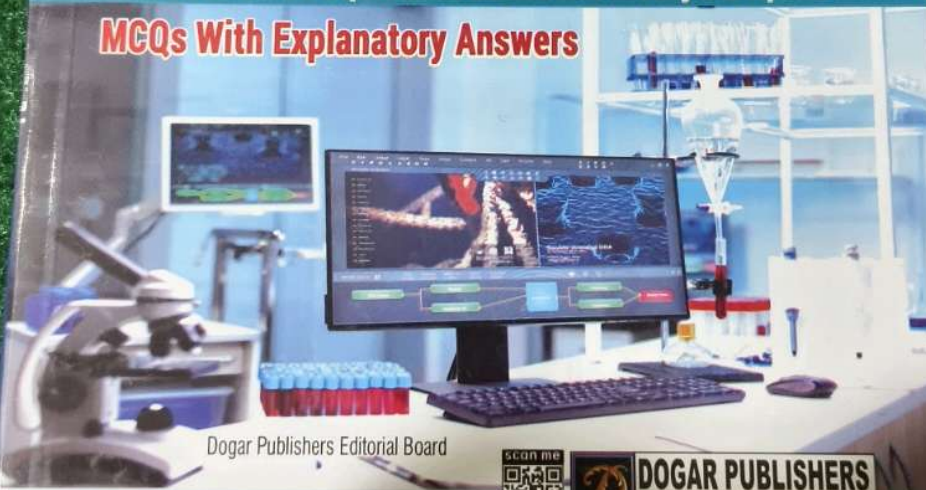


# PU-GS USAT-GS

• **GENERAL SCIENCE GROUP**

After 12-Years / Equivalent Education in Any Discipline

**MCQs With Explanatory Answers**



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FOR GENERAL SCIENCE GROUP

iii SELECTION PROCEDURE

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پرچہ حل

اس کتاب کے لئے ترتیب دیئے گئے  
سوالوں کے جواب دینا ہو گئے۔ نیچے چار  
طرز کے مطابق ان چار جزاات میں سے  
عمومی

February 1927  
March 1929

Wrestling Web  
Wildlife Web

اب آپ کا کام ہے کہ آپ اپنے گئے  
پہلی کا مظاہرہ کرنا ہو گا کہ آپ کو  
1- سوال کا درست جواب معلوم ہونے  
2- جواب کے بارے میں شک ہونے کی  
3- فرضیہ کہیں کہیں پاروں میں سے کسی  
4- (پندرہ روپے) کسی سوال کو پیشتر جواب  
کے لئے ہو سکتا ہے کہ آپ کا جواب درست

ii SELECTION PROCEDURE

3. Multiplication is distributive over addition and subtraction for rational numbers.  
Example:

$$\frac{a}{b} \times \left( \frac{c}{d} \pm \frac{e}{f} \right) = \frac{a}{b} \times \frac{c}{d} \pm \frac{a}{b} \times \frac{e}{f}$$

$$\frac{2}{3} \times \left( \frac{5}{7} \pm \frac{11}{13} \right) = \frac{2}{3} \times \frac{5}{7} \pm \frac{2}{3} \times \frac{11}{13}$$

4. For any rational number  $\frac{x}{y}$ ,  $\frac{x}{y} \times 1 = \frac{x}{y} = 1 \times \frac{x}{y}$ , one is called multiplicative identity.

5. Two rational numbers  $\frac{a}{b}$  and  $\frac{b}{a}$  are the multiplicative inverses of each other.

$$\frac{a}{b} \times \frac{b}{a} = 1 = \frac{b}{a} \times \frac{a}{b}$$

**Note:** The sign of the product is -ive, if there are an even number of negative factors or there are no negative factors. The sign of the product is -ive, if there are an odd number of negative factors

#### DIVISION

The process of subtraction of the same number from a given number for a few times is called division (+), i.e.,

$$6 \div 2 = 3$$

(2 can be subtracted 3 times from 6)

#### IMPORTANT POINTS

1. Division is the inverse operation of multiplication. For example  $6 \div 2 = 3$  means to find the number by which 2 should be multiplied so as to obtain 6.  
Because  $3 \times 2 = 6$   
Therefore,  $6 \div 2 = 3$
2. When a number is divided by another number, the first number i.e. the number which is being divided is called the **dividend**, the second number which divides is called the **divisor** and the number obtained as a result of division is called the **quotient**. In the above example, 6 is the dividend, 2 is the divisor and 3 is the quotient.
3. The operation of division starts from the left whereas the operations of addition, subtraction and multiplication start from the right.

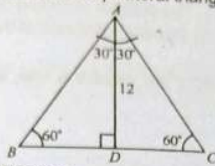
#### Divisibility:

The following table gives the rules to test the divisibility from 2 to 25.

Divisibility by	If	Example
2	Any number in the unit's place which is either even or zero.	12, 10, 26, 32, 38, 567992, 11110234
3	The sum of digits is divisible by 3.	$321 : 3 + 2 + 1 = 6$ is divisible by 3.
4	The last two digits of a number is divisible by 4.	$725324 : 24$ is divisible by 4.
5	The number ends with 5 or zero.	4112370, 5321095, 3331210, etc.
6	A number is divisible by 2 and the sum of the digits of the number is multiple of 3.	342, 63924, 154, 261 etc.

### Explanatory Answers

- Q1. (B) In any triangle, the sum of the angles =  $180^\circ$   
 $\therefore 45 + p + 2p = 180^\circ \Rightarrow 3p = 180 - 45 \Rightarrow p = \frac{135}{3} = 45$
- Q2. (C) To find the area, first of all we draw an equilateral triangle ABC, in which AD is altitude.



By, 30 - 60 Right Triangle Theorem,

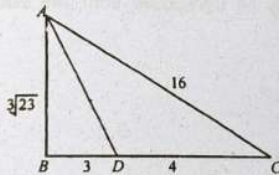
$$BD = \frac{12}{\sqrt{3}} = \frac{4 \times \sqrt{3} \times \sqrt{3}}{\sqrt{3}} = 4\sqrt{3}$$

Now, Base =  $4\sqrt{3} + 4\sqrt{3} = 8\sqrt{3}$  and altitude = 12

$$\text{Thus, Area} = \text{Base} \times \text{Altitude} \\ = 8\sqrt{3} \times 12 = 96\sqrt{3}$$

- Q3. If the triangle is not right, then any number greater than 1 and less than 25 could be the length of the third side. Now, if the triangle is right, then there are only two possibilities:
- (i) If 5 is the hypotenuse, then the legs are 4 and 3.
  - (ii) If 3 and 5 are two legs then hypotenuse is  $\sqrt{34}$ .

Q4. (B)



In  $\triangle ABC$ ,  $AC = 16$ ,  $BC = 3 + 4 = 7$ , using

$$\text{Pythagorean theorem, } AC^2 = (AB)^2 + BC^2 \Rightarrow 16^2 = AB^2 + 7^2 \\ \Rightarrow 256 = AB^2 + 49 \Rightarrow AB^2 = 256 - 49 = 207 \Rightarrow AB = \sqrt{207} \\ \Rightarrow AB = 3\sqrt{23}.$$

$$\text{Now, in } \triangle ABD, AD^2 = AB^2 + BD^2 \Rightarrow AD^2 = (3\sqrt{23})^2 + (3)^2 \\ \Rightarrow AD^2 = 9(23) + 9 \Rightarrow AD^2 = 207 + 9 \Rightarrow AD^2 = 216 \\ \Rightarrow AD = 6\sqrt{6}$$

- Q5. (A) Here,  $\angle A + \angle B + \angle C = 180 \Rightarrow a + b + 40 = 180 \Rightarrow a + b = 140$   
 Because the given triangle is an isosceles, i.e.,  $a = b$   
 Therefore,  $a$  and  $b$  are each 70, and  
 $x = 180 - 70 = 110^\circ$

45. If business managers are rewarded on the basis of how much output they create:  
 (a) consumers will get exactly what they want  
 (b) it causes profits to be as large as possible  
 (c) productivity growth must be positive  
 (d) there is the potential for quality to suffer ✓
46. If we find the elasticities of demand and supply in the neighbourhood of new equilibrium, we find with respect to price that:  
 (a) demand will be more elastic than supply ✓  
 (b) supply will be more elastic than demand  
 (c) both are equally elastic  
 (d) none of them
47. The cobweb model will diverge from one point when the slope of:  
 (a) demand curve is more than supply curve  
 (b) supply curve is more than demand curve ✓  
 (c) supply curve is equal to demand curve  
 (d) demand curve is equal to supply curve
48. Stable cobweb model is a:  
 (a) simple model  
 (b) dynamic model  
 (c) both of them ✓  
 (d) none of them
49. The model which gives us information about price and output changes in different periods is:  
 (a) stable cobweb model  
 (b) perpetual oscillation model  
 (c) both (a) and (b) ✓  
 (d) none of them
50. When quantity demanded is greater than quantity supplied, then price trend:  
 (a) Falls  
 (b) rises ✓  
 (c) remains ineffective  
 (d) becomes zero

\*\*\*\*\*

## THEORY OF CONSUMER BEHAVIOUR AND DEMAND

When a consumer is satisfied with his spending pattern, he is said to be in:

- (a) balanced state  
 (b) equilibrium ✓  
 (c) disequilibrium  
 (d) Static form

Marshallian approach is also known as:

- (a) cardinal approach ✓  
 (b) ordinal approach  
 (c) consumer approach  
 (d) producer approach

According to classical theory, utility:

- (a) can be ranked  
 (b) can be counted  
 (c) can be expressed in numbers ✓  
 (d) cannot be expressed in numbers

The utility function  $u = f(x)$  is based upon:

- (a) two goods  
 (b) few goods  
 (c) one good ✓  
 (d) many goods