

GATE 2020

Electrical Engineering

General Aptitude

Question Paper
& Solutions



- 1.** If P, Q, R, S are four individuals. How many teams of size exceeding one can be formed, with Q as a member?
- A. 8 B. 6
C. 5 D. 7

[2020 : 1 Mark]

Ans. D

Sol. ${}^3C_1 + {}^3C_2 + {}^3C_3$

$$3 + 3 + 1 = 7$$

Possible combinations,

PQ, RQ, SQ, PRQ, PSQ, RSQ, PQRS

- 2.** In our four-digit integer numbers from 1001 to 9999, the digit group "37" (in the same sequence) appears _____ times.
- A. 299 B. 270
C. 280 D. 279

[2020 : 2 Marks]

Ans. D

Sol. Four-digit integer numbers from 1001 to 9999, with "37" as sequence appears in the following cases.

Case-1: 3 7 ___ ___

Now, the last two digits can be filled with 0 to 9. Therefore, each digital can be filled with 10 ways.

Hence, total number of ways for both digits is $10 \times 10 = 100$ integers

Case-2: ___ 3 7 ___

Now, in the first digit, 0 must not be a digit, therefore its total number of ways = 9

And last digit can be filled with 10 ways

Hence, total number of ways = $9 \times 10 = 90$ integers

Case-3: ___ ___ 3 7

Now, in the first digit, 0 must not be a digit, therefore its total number of ways = 9

And second digit can be filled with 10 ways

Hence, total number of ways = $9 \times 10 = 90$ integers

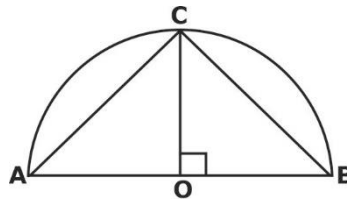
Total number of integers = $100 + 90 + 90 = 280$ ways

But in the number 3737, "37" appears two times. We need to count the 37 in this case twice but not once.

Therefore, total number of integers = $280 - 1 = 279$

Hence, option C is correct.

3. Given a semicircle with O as the centre; as shown in the figure, the ratio $\frac{\overline{AC} + \overline{CB}}{\overline{AB}}$ is _____ . Where \overline{AC} , \overline{CB} and \overline{AB} are chords.

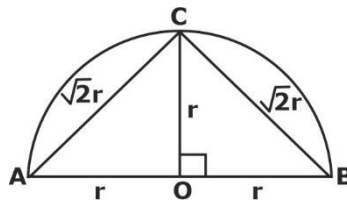


- A. $\sqrt{2}$ B. $\sqrt{3}$
C. 2 D. 3

[2020 : 2 Marks]

Ans. A

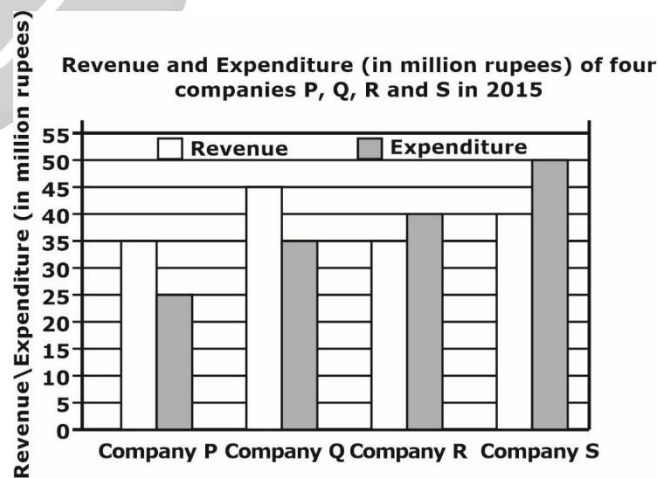
Sol.



The ratio,

$$\frac{\overline{AC} + \overline{CB}}{\overline{AB}} = \frac{\sqrt{2}r + \sqrt{2}r}{2r} = \frac{2\sqrt{2}}{2} = \sqrt{2}$$

4. The revenue and expenditure of four different companies P, Q, R and S in 2015 are shown in the figure. If the revenue of company Q in 2015 was 20% more than that in 2014, and company Q and earned a profit of 10% on expenditure in 2014, then its expenditure (in million rupees) in 2014 was _____ .



- A. 34.1 B. 32.7
C. 33.7 D. 35.1

[2020 : 2 Marks]

Ans. A

Sol. Let the revenue of company Q in 2010 = x in million rupees.

Then the revenue of company Q in 2015 = 1.2x in million rupees.

Given in graph,

$$1.2x = 45$$

$$x = 37.5 \text{ in million rupees.}$$

As given in question Q had earned a profit of 10%.

∴ Expenditure of company Q in 2014

$$= \frac{37.5}{1.1} = 34.09 \approx 34.1$$

5. Select the next element of the series: Z, WV, RQP, _____.

A. JIHG

B. KJIH

C. NMLK

D. LKJI

[2020 : 2 Marks]

Ans. B

Sol.

Z, MV, RQP, KJIH
26, 23, 22, 18, 17, 16, 11, 10, 9, 8

6. Non-performing Assets (NPAs) of a bank in India is defined as an asset, which remains unpaid by a borrower for a certain period of time in terms of interest, principal, or both. Reserve Bank of India (RBI) has changed the definition of NPA thrice during 1993-2004. in terms of the holding period of loans. The holding period was reduced by one quarter each time. In 1993, the holding period was four quarters (360 days). Based on the above paragraph, the holding period of loans in 2004 after the third revision was _____ days.

A. 45

B. 135

C. 90

D. 180

[2020 : 2 Marks]

Ans. C

Sol. Given that: Initial holding period = 360 days

Number of days for each quarter = 90 days

It is given that the holding period was reduced by one quarter each time, i.e., reduced by 90 days each time and RBI has changed the definition of NPA thrice during 1993 – 2004.

After the first revision, the holding period of loans

$$= 360 - 90 = 270$$

After the second revision, the holding period of loans

$$= 270 - 90 = 180$$

After the third revision, the holding period of loans

$$= 180 - 90 = 90$$

Therefore, after third revision, the holding period remains 90 days.

Hence, option C is correct.

7. Stock markets _____ at the news of the coup.

- A. poised B. plunged
C. plugged D. probed

[2020 : 1 Mark]

Ans. B

Sol. The correct answer is option B i.e., plunged.

Plunged: fell suddenly and uncontrollably; suffered a rapid decrease in value.

Poised: been or caused to be balanced or suspended.

Plugged: blocked or filled in a hole or cavity.

Probed: physically explored or examined something with the hands or an instrument.

8. People were prohibited _____ their vehicles near the entrance of the main administrative building.

- A. to park B. from parking
C. parking D. to have parked

[2020 : 1 Mark]

Ans. B

Sol. The verb prohibit means to forbid or prevent; it is followed by the preposition form.

The presence of the preposition from necessitates the use of the verb following it to be in its present participle form.

The correct sentence is "People were prohibited **from parking** their vehicles near the entrance of the main administrative building".

9. Select the word that fits the analogy:

Do : Undo : Trust: _____

- A. Entrust B. Intrust
B. Distrust D. Untrust

[2020 : 1 Mark]

Ans. C

Sol. Trust: believe in the reliability, truth, or ability of

Distrust: doubt the honesty or reliability of; regard with suspicion

Entrust: assign the responsibility for doing something to someone.

Intrust: it means the same as "entrust".

Untrust: it means the same as "distrust".

10. This book, including all its chapters _____ interesting. The students as well as the instructor _____ in agreement about it.

- A. is, was B. are, are
C. is, are D. were, was

[2020 : 1 Mark]

Ans. C

Sol. The given question is on the subject-verb agreement rule in basic English grammar.

In the first sentence, the subject is the singular noun "book". It will take a verb in the singular form. Thus, "is" is the correct fit for the blank.

In the second sentence, the conjunction phrase "as well as" has been used. It is followed by a verb agreeing with the first subject of the sentence, i.e., the subject present before the phrase.

Thus, the correct fit for the blank is "are" as it agrees with the plural subject "students".

Hence, option C is correct.