AME CET Aptitude & Reasoning

Sample Paper – 9

Duration: 30 Minutes **Maximum Marks: 120**

Instructions

- This paper contains **30** Multiple Choice Questions (Single Correct Answer), covering **Quantitative Aptitude** (Q1–15) and **Logical & Analytical Reasoning** (Q16–30), in the **AME CET** marking style.
- Each correct answer carries **+4 marks**. Each wrong answer carries -1 **mark**. Unattempted questions carry **0 marks**.
- Only **one** option is correct per question. Choose carefully.
- This is a **supplementary aptitude practice set** for AME CET aspirants; pacing is one minute per question, matching the main exam.
- Use of mobile phones, calculators, or any electronic gadget is strictly prohibited.

Part A: Quantitative Aptitude

Q1. By what percent is 60 more than 50?

(A) 16.67%

(B) 20%

(C) 10%

(D) 25%

Q2. Two quantities are in the ratio $5 : 7$. If the smaller quantity is 25, the larger quantity is:

(A) 35

(B) 30

(C) 45

(D) 28

Q3. An article is sold at a 15% profit for Rs. 460. Its cost price is:

(A) Rs. 391

(B) Rs. 445

(C) Rs. 400

(D) Rs. 420

Q4. The average of the first 6 natural numbers $(1, 2, \ldots, 6)$ is:

(A) 3

(B) 4

(C) 6

(D) 3.5

Q5. A car travels at 40 km/h for 2.5 hours. The distance it covers is:

(A) 80 km

(B) 100 km

(C) 120 km

(D) 16 km

Q6. A worker completes $\frac{1}{4}$ of a job in 5 days. Working at the same rate, he will finish the whole job in:

(A) 20 days

(B) 15 days

(C) 10 days

(D) 25 days

Q7. The simple interest on Rs. 800 at 10% per annum for 5 years is:

(A) Rs. 500

(B) Rs. 160

(C) Rs. 800

(D) Rs. 400

Q8. The ages of A and B are in the ratio $4 : 3$. If A is 24 years old, then B is:

(A) 32 years

(B) 21 years

(C) 18 years

(D) 16 years

Q9. A trader buys 3 articles for Rs. 60 and sells each of them for Rs. 25. His profit percent is:

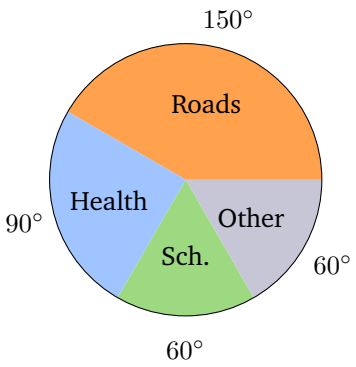
(A) 20%

(B) 15%

(C) 25%

(D) 30%

Q10. The pie chart below shows how a town's monthly budget of Rs. 3,600 is divided. The amount allotted to the **Roads** sector (a 150° sector) is:



(A) Rs. 900

(B) Rs. 600

(C) Rs. 1,800

(D) Rs. 1,500

Q11. The average of three consecutive integers is 11. The middle integer is:

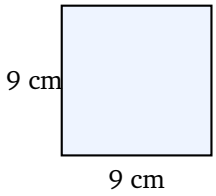
(A) 11

(B) 10

(C) 12

(D) 33

Q12. The perimeter of the square shown below, whose side is 9 cm, is:



(A) 81 cm

(B) 36 cm

(C) 18 cm

(D) 45 cm

Q13. A speed of 54 km/h expressed in metres per second is:

(A) 10 m/s

(B) 20 m/s

(C) 18 m/s

(D) 15 m/s

Q14. A boat's speed in still water is 8 km/h and the speed of the stream is 3 km/h. The boat's speed upstream is:

(A) 11 km/h

(B) 8 km/h

(C) 3 km/h

(D) 5 km/h

Q15. The compound interest on Rs. 1500 at 10% per annum for 2 years (compounded annually) is:

(A) Rs. 300

(B) Rs. 165

(C) Rs. 315

(D) Rs. 330

Part B: Logical & Analytical Reasoning

Q16. Find the next number in the series: $3,\ 9,\ 27,\ 81,\ ?$

(A) 162

(B) 243

(C) 108

(D) 324

Q17. Find the next term in the series: $D,\ H,\ L,\ P,\ ?$

(A) T

(B) S

(C) U

(D) R

Q18. In a certain code each letter is moved 2 places forward (so $A \to C$). In this code, DOG is written as:

(A) EPH

(B) FQH

(C) GQI

(D) FQI

Q19. How is your brother's son related to you?

(A) Cousin

(B) Son

(C) Nephew

(D) Brother

Q20. A person walks 7 km towards the East, then turns around and walks 7 km towards the West, as shown. How far is the person now from the starting point?

(A) 14 km

(B) 7 km

(C) 3.5 km

(D) 0 km

Q21. Choose the option that completes the analogy: **Book : Read :: Food : ?**

(A) Eat

(B) Cook

(C) Plate

(D) Hungry

Q22. Choose the one that does **not** belong with the others: **Dog, Cat, Lion, Sparrow**

(A) Dog

(B) Sparrow

(C) Lion

(D) Cat

Q23. Statements: *All roses are red. This flower is a rose.* Which conclusion necessarily follows?

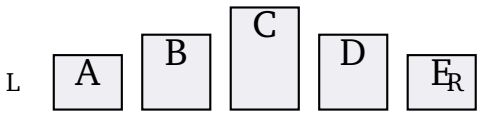
(A) This flower is not red

(B) This flower is red

(C) This flower is white

(D) No rose is red

Q24. Five friends stand in a row arranged by height. The tallest friend, C, stands exactly in the middle, as shown. Who occupies the middle position?



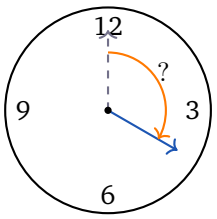
(A) B

(B) D

(C) C

(D) A

Q25. The minute hand of a clock moves from the 12 to the 4 over 20 minutes, as shown. The angle it sweeps through is:



(A) 120°

(B) 90°

(C) 60°

(D) 144°

Q26. If today is Thursday, then the day of the week 100 days later will be:

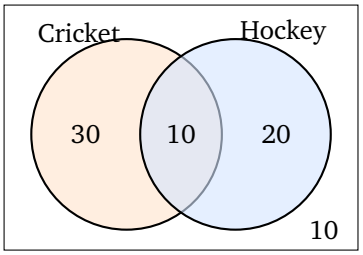
(A) Saturday

(B) Sunday

(C) Friday

(D) Monday

Q27. In a group of 70 people, 40 play cricket, 30 play hockey and 10 play both, as in the Venn diagram. How many play **neither**?



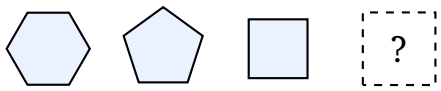
(A) 20

(B) 10

(C) 5

(D) 15

Q28. In the figure series below, the polygons have 6, 5 and 4 sides in turn. How many sides should the next figure have?



(A) 5

(B) 4

(C) 3

(D) 6

Q29. In a class, Meena ranks 9th from the top and 9th from the bottom. The total number of students in the class is:

(A) 18

(B) 17

(C) 19

(D) 16

Q30. If in a certain pattern $2 \rightarrow 6$, $4 \rightarrow 12$ and $6 \rightarrow 18$, then $10 \rightarrow ?$

(A) 30

(B) 60

(C) 20

(D) 36

Detailed Solutions

Q1.

Solution

Concept — Percent increase: The percent by which one value exceeds another is the difference divided by the *reference* (the smaller value here), times 100.

Step 1 — Find the difference:

$$60 - 50 = 10$$

Step 2 — Divide by the reference value (50):

$$\frac{10}{50} \times 100 = 20\%$$

Why other options are wrong:

- Option A (16.67%): divides by 60 instead of 50, answering "what percent less is 50 than 60."
- Option C (10%): treats the raw difference of 10 as the percent.
- Option D (25%): uses an incorrect reference.

Final Answer: $20\% \Rightarrow \boxed{\text{B}}$

Answer: (B) Go Back to Q1

Q2.

Solution

Concept — Scaling a ratio: Find the value of one ratio part, then multiply by the larger term.

Step 1 — Match the smaller term to its value: The smaller term is 5 and equals 25, so one part $= \frac{25}{5} = 5$.

Step 2 — Find the larger quantity (7 parts):

$$7 \times 5 = 35$$

Why other options are wrong:

- Option B (30): would make one part 6, contradicting $5 \times 6 = 30 \neq 25$.

- Option C (45): uses 9 parts, not 7.
- Option D (28): does not preserve the $5 : 7$ ratio with 25.

Final Answer: $35 \Rightarrow \boxed{A}$

Answer: (A) Go Back to Q2

Q3.

Solution

Concept — Cost price from selling price and profit: $\text{SP} = \text{CP} \times \left(1 + \frac{\text{Profit\%}}{100}\right)$.

Step 1 — Write the relation with 15% profit:

$$460 = \text{CP} \times 1.15$$

Step 2 — Solve for CP:

$$\text{CP} = \frac{460}{1.15} = 400$$

Why other options are wrong:

- Option A (391): subtracts 15% of 460 instead of dividing by 1.15.
- Option B (445): subtracts a flat Rs. 15.
- Option D (420): does not satisfy $420 \times 1.15 = 483 \neq 460$.

Final Answer: Rs. $400 \Rightarrow \boxed{C}$

Answer: (C) Go Back to Q3

Q4.

Solution

Concept — Average of consecutive numbers: The average equals the sum divided by the count.

Step 1 — Sum the first 6 natural numbers:

$$\frac{6 \times 7}{2} = 21$$

Step 2 — Divide by the count:

$$\frac{21}{6} = 3.5$$

Why other options are wrong:

- Option A (3) and Option B (4): the average of an even count of consecutive integers is not a whole number.
- Option C (6): this is the largest number, not the average.

Final Answer: 3.5 $\Rightarrow$ D

Answer: (D) Go Back to Q4

Q5.

Solution

Concept — Distance from speed and time: Distance = Speed $\times$ Time.

Step 1 — Substitute the values:

$$\text{Distance} = 40 \times 2.5$$

Step 2 — Compute:

$$40 \times 2.5 = 100 \text{ km}$$

Why other options are wrong:

- Option A (80): uses a time of 2 hours.
- Option C (120): uses a time of 3 hours.
- Option D (16): divides 40 by 2.5 instead of multiplying.

Final Answer: 100 km $\Rightarrow$ B

Answer: (B) Go Back to Q5

Q6.

Solution

Concept — Scaling work to time: If a fraction of the job takes a known time, the whole job takes proportionally longer.

Step 1 — Identify the part done: $\frac{1}{4}$ of the job is done in 5 days.

Step 2 — Scale up to the whole job: The whole job is 4 times that part, so it takes

$$4 \times 5 = 20 \text{ days}$$

Why other options are wrong:

- Option B (15): scales by 3, as if $\frac{1}{3}$ were done.
- Option C (10): scales by 2 only.
- Option D (25): scales by 5, as if $\frac{1}{5}$ were done.

Final Answer: 20 days $\Rightarrow$ A

Answer: (A) Go Back to Q6

Q7.

Solution

Concept — Simple Interest: $\text{SI} = \dfrac{P \times R \times T}{100}$.

Step 1 — Substitute $P = 800$, $R = 10$, $T = 5$:

$$\text{SI} = \frac{800 \times 10 \times 5}{100}$$

Step 2 — Compute the numerator:

$$800 \times 10 \times 5 = 40000$$

Step 3 — Divide by 100:

$$\frac{40000}{100} = 400$$

Why other options are wrong:

- Option B (160): uses $T = 2$ years.
- Option A (500): does not match $800 \times 10 \times 5/100$.
- Option C (800): equals the principal, not the interest.

Final Answer: Rs. 400 $\Rightarrow$ D

Answer: (D) Go Back to Q7

Q8.

Solution

Concept — Ratio applied to a known value: Find the value of one part from A, then compute B.

Step 1 — Find one part from A: A corresponds to 4 parts and equals 24, so one part $= \dfrac{24}{4} = 6$.

Step 2 — Find B (3 parts):

$$3 \times 6 = 18$$

Why other options are wrong:

- Option A (32): treats A as the smaller term.
- Option B (21): does not preserve the $4 : 3$ ratio with 24.
- Option D (16): uses one part as 4 instead of 6.

Final Answer: 18 years $\Rightarrow$ $\boxed{\text{C}}$

Answer: (C) Go Back to Q8

Q9.

Solution

Concept — Profit percent over total cost: Compare total selling price with total cost price.

Step 1 — Find the total cost price: 3 articles cost Rs. 60 in all.

Step 2 — Find the total selling price: Each sells for Rs. 25, so $3 \times 25 = 75$.

Step 3 — Compute the profit percent:

$$\text{Profit} = 75 - 60 = 15, \qquad \frac{15}{60} \times 100 = 25\%$$

Why other options are wrong:

- Option A (20%): takes the profit as a percent of SP (75), not CP.
- Option B (15%): treats the raw profit of Rs. 15 as a percent.
- Option D (30%): an incorrect ratio.

Final Answer: 25% $\Rightarrow$ $\boxed{\text{C}}$

Answer: (C) Go Back to Q9

Q10.

Solution

Concept — Reading a pie chart: Each sector's share of the total equals its angle divided by $360°$.

Step 1 — Find the Roads fraction:

$$\frac{150°}{360°} = \frac{5}{12}$$

Step 2 — Apply it to the budget:

$$\frac{5}{12} \times 3600 = 5 \times 300 = 1500$$

Why other options are wrong:

- Option A (900): corresponds to the $90°$ Health sector.
- Option B (600): corresponds to a $60°$ sector.
- Option C (1800): would need a $180°$ sector.

Final Answer: Rs. 1,500 $\Rightarrow$ $\boxed{\text{D}}$

Answer: (D) Go Back to Q10

Q11.

Solution

Concept — Average of consecutive integers: For an odd count of consecutive integers, the average equals the middle term.

Step 1 — Let the integers be $n-1,\ n,\ n+1$: Their sum is $3n$ and their average is $\frac{3n}{3} = n$.

Step 2 — Set the average equal to 11:

$$n = 11$$

So the middle integer is 11.

Why other options are wrong:

- Option B (10) and Option C (12): these are the neighbours, not the middle term.
- Option D (33): this is the total sum, not the middle integer.

Final Answer: 11 $\Rightarrow$ A

Answer: (A) Go Back to Q11

Q12.

Solution

Concept — Perimeter of a square: $P = 4 \times$ side.

Step 1 — Substitute the side:

$$P = 4 \times 9$$

Step 2 — Compute:

$$4 \times 9 = 36 \text{ cm}$$

Why other options are wrong:

- Option A (81): this is the area 9^2, not the perimeter.
- Option C (18): doubles the side instead of using four sides.
- Option D (45): multiplies the side by 5.

Final Answer: 36 cm $\Rightarrow$ B

Answer: (B) Go Back to Q12

Q13.

Solution

Concept — Converting km/h to m/s: Multiply by $\frac{5}{18}$.

Step 1 — Apply the factor:

$$54 \times \frac{5}{18}$$

Step 2 — Simplify:

$$\frac{270}{18} = 15 \text{ m/s}$$

Why other options are wrong:

- Option A (10): corresponds to 36 km/h.
- Option B (20): corresponds to 72 km/h.
- Option C (18): uses the wrong factor.

Final Answer: 15 m/s $\Rightarrow$ D

Answer: (D) Go Back to Q13

Q14.

Solution

Concept — Upstream speed: Against the current, the effective speed is the still-water speed minus the stream speed.

Step 1 — Write the upstream formula:

$$\text{Upstream speed} = \text{boat} - \text{stream}$$

Step 2 — Substitute and compute:

$$8 - 3 = 5 \text{ km/h}$$

Why other options are wrong:

- Option A (11): this is the *downstream* speed $(8 + 3)$.
- Option B (8): ignores the stream entirely.
- Option C (3): uses only the stream speed.

Final Answer: 5 km/h $\Rightarrow$ D

Answer: (D) Go Back to Q14

Q15.

Solution

Concept — Compound Interest: CI $= P\left[(1 + \frac{R}{100})^T - 1\right]$.

Step 1 — Substitute $P = 1500$, $R = 10$, $T = 2$**:**

$$\text{CI} = 1500\left[(1.1)^2 - 1\right]$$

Step 2 — Evaluate $(1.1)^2$**:**

$$(1.1)^2 = 1.21$$

Step 3 — Compute:

$$1500 \times (1.21 - 1) = 1500 \times 0.21 = 315$$

Why other options are wrong:

- Option A (300): this is the simple interest, omitting interest on interest.
- Option B (165): only one year's interest plus a slip.
- Option D (330): an over-estimate.

Final Answer: Rs. 315 $\Rightarrow$ C

Answer: (C) Go Back to Q15

Q16.

Solution

Concept — Geometric series: Check the ratio between consecutive terms.

Step 1 — Find the common ratio:

$$\frac{9}{3} = 3, \quad \frac{27}{9} = 3, \quad \frac{81}{27} = 3$$

Each term is the previous one multiplied by 3.

Step 2 — Multiply the last term by 3:

$$81 \times 3 = 243$$

Why other options are wrong:

- Option A (162): multiplies by 2.
- Option C (108): adds 27 instead of tripling.
- Option D (324): multiplies by 4.

Final Answer: 243 $\Rightarrow$ B

Answer: (B) Go Back to Q16

Q17.

Solution

Concept — Letter series by position: Convert letters to positions and track the gaps.

Step 1 — Write positions:

$$D = 4,\ H = 8,\ L = 12,\ P = 16$$

Step 2 — Find the gap: Each step adds 4: $8-4=4$, $12-8=4$, $16-12=4$.

Step 3 — Find the next letter:

$$16+4=20 \Rightarrow \text{the 20th letter is } T$$

Why other options are wrong:

- Option B (S): position 19, a gap of 3.
- Option C (U): position 21, a gap of 5.
- Option D (R): position 18, a gap of 2.

Final Answer: T $\Rightarrow$ A

Answer: (A) Go Back to Q17

Q18.

Solution

Concept — Fixed forward shift: Move each letter 2 places forward in the alphabet.

Step 1 — Shift each letter of DOG by $+2$:

$$D \to F, \quad O \to Q, \quad G \to I$$

Step 2 — Read the code:

$$\text{DOG} \to \text{FQI}$$

Why other options are wrong:

- Option A (EPH): uses a $+1$ shift.
- Option B (FQH): codes G as H $(+1)$ instead of I.
- Option C (GQI): codes D as G $(+3)$.

Final Answer: FQI $\Rightarrow$ D

Answer: (D) Go Back to Q18

Q19.

Solution

Concept — Naming a relation: The son of one's brother (or sister) is one's nephew.

Step 1 — Identify the link: "My brother's son" is the male child of your sibling.

Step 2 — Apply the standard term: A sibling's son is called a *nephew*.

Why other options are wrong:

- Option A (Cousin): a cousin is the child of your uncle or aunt, not of your brother.
- Option B (Son): your son is your own child, not your brother's.
- Option D (Brother): a brother shares your parents; this is the next generation.

Final Answer: Nephew $\Rightarrow$ $\boxed{\text{C}}$

Answer: (C) Go Back to Q19

Q20.

Solution

Concept — Net displacement on a straight line: Equal moves in opposite directions cancel out.

Step 1 — Track the two moves: 7 km East, then 7 km West along the same line.

Step 2 — Combine the opposite moves:

$$7 \text{ (East)} - 7 \text{ (West)} = 0$$

The person returns exactly to the starting point.

Step 3 — State the distance from start:

$$\text{Distance} = 0 \text{ km}$$

Why other options are wrong:

- Option A (14): adds the two legs as if they were in the same direction.
- Option B (7): counts only one leg.
- Option C (3.5): halves a leg with no basis.

Final Answer: 0 km $\Rightarrow$ D

Answer: (D) Go Back to Q20

Q21.

Solution

Concept — Action analogy: Read a book means to "read" it; find the matching action done with food.

Step 1 — Identify the relationship: Book $\rightarrow$ Read means "the typical action performed on it."

Step 2 — Apply to "Food": The action typically performed on food is to *eat* it.

Why other options are wrong:

- Option B (Cook): preparation, not the parallel of reading.
- Option C (Plate): an object, not an action.
- Option D (Hungry): a state, not an action performed on food.

Final Answer: Eat $\Rightarrow$ A

Answer: (A) Go Back to Q21

Q22.

Solution

Concept — Common category test: Find the shared property; the exception is the odd one out.

Step 1 — Classify each item: Dog, Cat and Lion are all mammals (four-legged animals).

Step 2 — Examine the sparrow: A sparrow is a bird, not a mammal.

Step 3 — Conclude: Sparrow does not share the "mammal" property, so it is the odd one out.

Why other options are wrong:

- Options A (Dog), C (Lion), D (Cat): all are mammals, so they belong together.

Final Answer: Sparrow $\Rightarrow$ B

Answer: (B) Go Back to Q22

Q23.

Solution

Concept — Applying a universal statement: If all members of a group share a property, then any specific member also has it.

Step 1 — State the rule: All roses are red.

Step 2 — Apply it to the given flower: This flower is a rose, and every rose is red, so this flower is red.

Why other options are wrong:

- Option A (not red): contradicts "all roses are red."
- Option C (white): introduces a colour not supported by the statements.
- Option D (No rose is red): directly contradicts the first statement.

Final Answer: This flower is red $\Rightarrow$ B

Answer: (B) Go Back to Q23

Q24.

Solution

Concept — Reading a row of five: The middle position of a row of five is the third seat.

Step 1 — Locate the middle of five positions: With five friends in a row, position 3 is the centre.

Step 2 — Read who is there: The figure shows C, the tallest, standing in that central position.

Why other options are wrong:

- Option A (B) and Option B (D): these flank the middle, in positions 2 and 4.
- Option D (A): at the left end, position 1.

Final Answer: C $\Rightarrow$ C

Answer: (C) Go Back to Q24

Q25.

Solution

Concept — Minute-hand angle: In 60 minutes the minute hand sweeps 360°, so it moves 6° per minute.

Step 1 — Find the per-minute rate:

$$\frac{360^\circ}{60} = 6^\circ \text{ per minute}$$

Step 2 — Multiply by 20 minutes:

$$6^\circ \times 20 = 120^\circ$$

Why other options are wrong:

- Option B (90°): would be 15 minutes of movement.
- Option C (60°): would be 10 minutes of movement.
- Option D (144°): would be 24 minutes of movement.

Final Answer: $120^\circ \Rightarrow \boxed{\text{A}}$

Answer: (A) Go Back to Q25

Q26.

Solution

Concept — Days of the week using remainders: Advance by the number of days modulo 7.

Step 1 — Reduce 100 modulo 7:

$$100 \div 7 = 14 \text{ remainder } 2$$

Step 2 — Advance Thursday by 2 days:

$$\text{Thursday} \rightarrow \text{Friday} \rightarrow \text{Saturday}$$

Why other options are wrong:

- Option B (Sunday): advances by 3 days.
- Option C (Friday): advances by only 1 day.

- Option D (Monday): advances by 4 days.

Final Answer: Saturday $\Rightarrow$ A

Answer: (A) Go Back to Q26

Q27.

Solution

Concept — Inclusion–exclusion: $n(\text{Cricket or Hockey}) = n(\text{Cricket}) + n(\text{Hockey}) - n(\text{both})$.

Step 1 — Count those who play at least one game:

$$40 + 30 - 10 = 60$$

Step 2 — Subtract from the total group:

$$70 - 60 = 10$$

Why other options are wrong:

- Option A (20): forgets to subtract the 10 who play both.
- Option C (5): an incorrect subtraction.
- Option D (15): does not match $70 - 60$.

Final Answer: 10 $\Rightarrow$ B

Answer: (B) Go Back to Q27

Q28.

Solution

Concept — Decreasing-sides pattern: Track how the number of sides changes from one figure to the next.

Step 1 — List the sides: Hexagon (6), pentagon (5), square (4). The count drops by 1 each step.

Step 2 — Predict the next figure:

$$4 - 1 = 3 \text{ sides} \Rightarrow \text{a triangle}$$

Why other options are wrong:

- Option A (5) and Option D (6): these repeat earlier figures.
- Option B (4): repeats the square; the count must keep decreasing.

Final Answer: 3 (triangle) $\Rightarrow$ C

Answer: (C) Go Back to Q28

Q29.

Solution

Concept — Rank from both ends: Total = (rank from top) + (rank from bottom) -1.

Step 1 — Substitute the ranks:

$$\text{Total} = 9 + 9 - 1$$

Step 2 — Compute:

$$= 17$$

The "-1" avoids counting Meena twice.

Why other options are wrong:

- Option A (18): forgets to subtract 1.
- Option C (19): adds an extra student.
- Option D (16): subtracts 2 instead of 1.

Final Answer: 17 $\Rightarrow$ B

Answer: (B) Go Back to Q29

Q30.

Solution

Concept — Number pattern: Each number maps to three times itself.

Step 1 — Verify the rule:

$$2 \to 3 \times 2 = 6, \quad 4 \to 3 \times 4 = 12, \quad 6 \to 3 \times 6 = 18$$

So the rule is $n \to 3n$.

Step 2 — Apply to 10:

$$10 \rightarrow 3 \times 10 = 30$$

Why other options are wrong:

- Option B (60): multiplies by 6.
- Option C (20): multiplies by 2.
- Option D (36): adds 26 with no basis.

Final Answer: $30 \Rightarrow \boxed{\text{A}}$

Answer: (A) Go Back to Q30

Answer Key

Q	Ans	Q	Ans	Q	Ans	Q	Ans	Q	Ans
1	B	2	A	3	C	4	D	5	B
6	A	7	D	8	C	9	C	10	D
11	A	12	B	13	D	14	D	15	C
16	B	17	A	18	D	19	C	20	D
21	A	22	B	23	B	24	C	25	A
26	A	27	B	28	C	29	B	30	A