Quant 10% weightage

Q1. If x is the 90% of y, then what % of x is y? [Accenture, level 1]
a. 11.11%
b. 90.9
c. 111.11%
d. 190%
Ans: c
Soln: y = 100, x = 90
Required percentage = (100/90) x 100 = 111.11%

Q2. In an election between two candidates, 65% of the voters cast their votes, out of which 3% of the votes were decided to be invalid. A candidate got 81,965 votes, which is 65% of the total valid votes. What is the total number of votes enrolled in that election? [Accenture, Wipro, level 2]
1) 2,00,000
2) 1,90,000
3) 2,15,000
4) 1,85,000
Ans: 1
Solution:
Let the total number of voters registered be 100x
Casted votes = 65x
Valid votes = 97% of 65x
A candidate got 81965 votes which are 65% of the total valid votes.
So, 65% of 97% of 65x = 81965
So, x = 2000
Total votes = 200000

Q3. A person buys three spectacles at the rate of Rs. 4,000 per spectacles. He sells the first spectacles at a profit of 30%, the second spectacles at a loss of 10% and the third spectacles at a loss of 10%. What is the total percentage of profit earned in the whole transaction? [Infosys, level 2]
1) 7.14%
S2) 2.18% 3) 3.33% 4) 5.41%
Ans: 3
Hint: Selling Price = Cost Price + profit

Q4. Vikram allows two successive discounts of 20% and 10% on the marked price of a book, which is equal to a single discount of Rs. 252. Then how much profit will Vikram get, on that book, if the cost price is Rs. 600? [Wipro, level 2]
1) Rs. 72 2) Rs. 56 3) Rs. 48 4) Rs. 54
Ans: 3
Effective discount percent for two successive discounts of 20% and 10% = 20 + 10 - 20 x 10/100 = 28% of the marked price.

Q5: A lends Rs. 1500 to B and a certain sum to C at the same time at 8% per annum simple interest. If after 4 years, A altogether receives Rs. 1400 as interest from B and C, then the sum lent to C is [Gemini, Accenture, level 2]
A. Rs. 2875 B. Rs. 1885 C. Rs. 2875 D. Rs. 2615
Ans: A
Interest from B = PRT/100 = 1500 x 8 x 4/100 = 480
Interest from C = 1400 – 480 = 920

So, 920 = Px8x4/100
So, P lent to C = 2875

Q6: In how many years, Rs. 150 will produce the same interest at 6% as Rs. 800 produce in 2 years at 4½%? [Wipro, level 2]
A. 4 years B. 6 years C. 8 years D. 9 years
Ans: C
Use SI = PRT/100
150 x 6 x t/100 = 800 x 2 x 4.5/100
t = 8 years

Q7. Three friends went for a picnic. First brought five apples and the second brought three. The third friend however brought only Rs.8. What is the share of the first friend? [Infosys, level 2]
[1] 8 [2] 7 [3] 1 [4] None of these
Answer: Option # 2
The number of apples = 8, so the amount eaten by each of the three is 8/3 apples therefore first friend should be paid for 5 – (8/3) and second friend should be paid for 3–(8/3) apples. They should distribute the sum of Rs.8 in ratio 7/3 : 1/3, i.e., 7 : 1

Q8. Total salary of A, B & C is Rs.350. If they spend 75%, 80% & 56% of their salaries respectively their savings are as 10 : 12 : 33. Find the salary of C? [TCS, level 2]
[1] 80 [2] 150 [3] 180 [4] None of These
Answer: Option # 2
A's saving = 100 – 75 = 25% of his salary. B's saving = 100 – 80 = 20% of his salary C's saving = 100 – 56 = 44% of his salary 25/100 of A's salary : 20/100 of B's salary : 44/100 of C's salary = 10 : 12 : 33
or 25 × A's salary : 20 × B's salary : 44 × C's salary = 10 : 12 : 33
or 25 × A's salary / 20 × B's salary = 10/12
or A's salary : B's salary = 2 : 3,
B's salary : C's salary = 4 : 5
Thus A : B = 2 : 3, B : C = 4 : 5 Now making B common we have
A : B = 8 : 12, B : C = 12 : 15, or A : B : C = 8 : 12 : 15
Total salary = 350 Þ A's salary = 8 / (8 + 12 + 15) × 350 = 80
B's salary = 12 / (8 + 12 + 15) = 120, and C's Salary = 150

Q9. Three taps P, Q and R can fill a tank in 12 hrs, 15 hrs and 20 hrs respectively. If P is open all the time and Q and R are open for one hour each alternately, starting with Q, then the tank will be full in how many hours? [Accenture, level 1]
A) 9 hrs
B) 7 hrs
C) 13 hrs
D) 11 hrs
Ans B
Hint Basic time and work concept

Q10. 16 men and 12 women can complete a work in 20 days. 18 women can complete the same work in 40 days. In how many days will 12 men 27 women complete the same work? [Accenture, level 1]

A) 16 days
B) 18 days
C) 19 days
D) 21 days

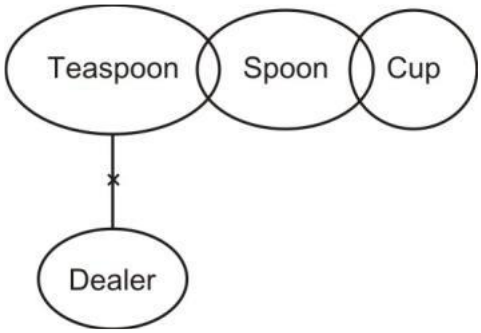
Ans: A

Reasoning 10 % Weightage

Direction (Q1 to Q2): In each of the questions given below, some statements are given followed by some conclusions. You have to assume all the statements to be true even if they seem to be at variance from the commonly known facts and then decide which of the given conclusions logically does not follow from the information given in the statements.

Q1. Statements:
Some teaspoons are spoons.
Some spoons are cups.
No teaspoon is dealer.
Conclusion:
A. All cups can be spoons.
B. All spoons can be dealer.
C. Some spoons cannot be dealer.
D. Some cups can be dealer.
E. Some cups can be teaspoon.
[Level-3; Accenture, Wipro, Infosys]

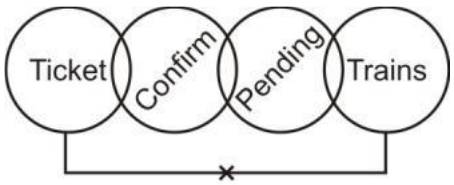
Answer: B
Solution:



All spoons can be dealer.

Q2. Statements:
Some tickets are confirm.
Some confirm are pending.
Some pending are trains.
No trains are ticket.
Conclusion:
A. Some pending are confirm.
B. No tickets are trains.
C. Some confirms are not trains, is a possibility.
D. Some tickets are not trains.
E. Some ticket can be pending.
[Level-3; Accenture, Wipro, Infosys]

Answer: C
Solution:



Some confirms are not train is a possibility.

Directions (Q3 to Q4)
In each question given below are some statements followed by conclusions numbered. You have to take the given statements to be true even if they seem to be at variance with commonly known facts and then decide which of the given conclusion/s logically follows from the given statements.

Q3. STATEMENTS: All birds are trees.
Some trees are hens.
CONCLUSION: (I)Some birds are hens.
(II)Some hens are trees.
A. If only conclusion (i) follows
B. If only conclusion (ii) follows
C. If either (i) or (ii) follows
D. If neither (i) nor (ii) follows
E. If both (i) and (ii) follows
[Level-3; Topic-Syllogism; Accenture, Wipro, Infosys]

Answer: B

Q4. STATEMENTS: Some birds are peacocks.
No cock is a hen.
All hens are peacocks.
CONCLUSIONS: I)Some cocks are peacocks.
II)Some birds are hens.
III)No cocks are peacocks.
IV)Some peacocks are not cocks.
A. either I or II follows B. II and IV follows C either I or III and IV follows D. none
[Level-3; Topic-Syllogism; Accenture, Wipro, Infosys]

Answer: C

Directions (Q5 to Q12): In each question three statements followed by two conclusions numbered I and II have been given. You have to take the given statement to be true even if they seem to be at variance with commonly known facts and then decide which of the given conclusions logically follows from the given statements. Give answer.

Q5. Statement: All frocks are trousers.
No pants are frocks.
Some jackets are pants.
Conclusions: I. At least some jackets are frocks.
II. No jacket is a frock.
A. If only conclusion I follows.
B. If only conclusion II follows.
C. If neither conclusion I nor II follows.
D. If both conclusion I and II follows.
E. If either conclusion I or II follows.

[Level-2; Topic-Syllogism; Accenture, TCS, Wipro, Infosys]

Answer: E
Solution:
Checking C1: At least some jackets are frocks.
Using S3 and S2,
Some jackets are pants + No pants are frocks = Some jackets are not frocks. Hence, C1 doesn't follow.
Checking C2: No jacket is a frock.
Clearly, we can observe that we have already got a definite conclusion above between the classes 'jacket' and 'frock'. Hence, C2 doesn't follow either.
However, we closely observe, we can find that both C1 and C2 together form a complementary pair and therefore either C1 or C2 definitely follows.
Option E is hence the correct answer.

Q6. Statements: All bottles are jugs.
All pans are jugs.
Some jugs are not mugs.
Conclusions: I. Some bottles are not pans.
II. Some mugs may not be jugs.
A. If only conclusion I follow
B. If only conclusion II follow
C. If neither conclusion I nor conclusion II follows
D. If both the conclusions follow
E. If either conclusion I or conclusion II follows.
[Level-2; Topic-Syllogism; Accenture, TCS, Wipro, Infosys]

Answer: B
Solution:
Checking Conclusion I: Some bottles are not pans.
Here, neither S1 nor S2 is a negative statement, a negative conclusion between the classes of 'Bottles' and 'Pans' is not possible. C1, hence, doesn't follow.
Checking Conclusion II: Some mugs may not be jugs.
In S3 it's given that 'Some jugs are not mugs'. Here, we are not sure of the elements of the class 'Mugs'. Clearly, we can say that 'Some mugs may not be jugs'. C2, hence, follows.
Option B is hence the correct answer.

Q7. Statements: Some printers are scanners.
Some scanners are microphones.
Many microphones are speakers.
Conclusions: I. Some printers are speakers.
II. Not a single printer is speaker.
A. If only conclusion I follow
B. If only conclusion II follow
C. If neither conclusion I nor conclusion II follows
D. If both the conclusions follow
E. If either conclusion I or conclusion II follows.
[Level-2; Topic-Syllogism; Accenture, TCS, Wipro, Infosys]

Answer: E
Solution:

Checking Conclusion I and II together: 'Some printers are speakers' and 'Not a single printer is speaker' Clearly, all the statements are I type, we can't define a relationship between classes scanner exist in two different statements.
Similarly, we can't define a relationship between the classes 'printer' and 'speaker' either.
But, C1 is an I type statement and C2 an E type, and they together form an E+I combination (Complementary Pair).
Clearly, either C1 or C2 follows.
Option E is hence the correct answer.

Q8. Statements: All brushes are toilets.
No sink is a soap.
No toilet is a sink.
Conclusions: I. Some soaps are toilets.
II. No sink is a toilet.
A. if only conclusion I follows.
B. If only conclusions II follows
C. If either conclusion I or II follows.
D. If neither conclusion I nor II follows.
E. If both conclusion I and II follow.
[Level-2; Topic-Syllogism; Accenture, TCS, Wipro, Infosys]

Answer: B
Solution:
No toilet is a sink (E) + No sink is a soap (E)
E + E = No conclusion.
Hence, conclusion I does not follow.
Again, from third statement, conclusion II follows.
Hence, option B is correct.

Q9. Statements: All brushes are toilets.
No sink is a soap.
No toilet is a sink.
Conclusions: I. At least some toilets are brushes.
II. No brush is a sink.
A. if only conclusion I follows.
B. If only conclusions II follows
C. If either conclusion I or II follows.
D. If neither conclusion I nor II follows.
E. If both conclusion I and II follow.
[Level-2; Topic-Syllogism; Accenture, TCS, Wipro, Infosys]

Answer: E
Solution:
From first statement,
Conclusion I follows.
Again, All brushes are toilets (A) + No toilet is a sink (E)
A + E = E
No brush is a sink.
Hence, conclusion II follows.
Hence, option E is correct.

Q10. Statements: Some fruits are Sweets.
All Sweets are vegetables.

No cake is a fruit.
Conclusions: I. Some Sweets are cakes.
II. Some fruits are vegetables.
A. If only conclusion I follows
B. If only conclusion II follows
C. If either conclusion I or II follows
D. If neither conclusion I nor II follows
E. If both conclusions I and II follow
[Level-2; Topic-Syllogism; Accenture, TCS, Wipro, Infosys]

Answer: B
Solution:
No cake is a fruit (E) + some fruits are Sweets (I)
E + I = O*
some Sweets are not cakes.
Hence, conclusion I does not follow.
Again, some fruits are Sweets (I) + All Sweets are vegetables (A)
I + A = I
some fruits are vegetables(I).
Hence conclusion II follows.
Hence, option B is correct.

Verbal 10% Weightage

Instructions (Q.1 to Q.7): You are given four options. One of them improves the sentence by correcting grammar, punctuation, word choice, or sentence structure. **Choose the option that best improves the sentence.** **(Cognizant)**

1. The report, which was initially expected to be completed last quarter, *are riddled with inconsistencies that need immediate addressing.*
(a) are riddled with inconsistencies that need immediate addressing
(b) is riddled with inconsistencies that need immediate address
(c) is riddled with inconsistencies that need to be addressed immediately
(d) are riddled with inconsistencies that are needing immediate address
Answer: (c)
Hint: Subject "report" is singular; correct verb is "is riddled" and proper idiomatic form is "need to be addressed."

2. The guests, along with the host, *was surprised by the sudden announcement made during the dinner.*
(a) was surprised by the sudden announcement
(b) were surprised by the sudden announcement
(c) were surprised with the sudden announcement
(d) was surprising with the sudden announcement
Answer: (b)
Hint: The verb agrees with the plural subject "guests" despite the intervening phrase.

3. Many a manager, when dealing with high-pressure scenarios, *tend to lose their composure in public forums.*
(a) tend to lose their composure in public forums
(b) tends to lose his composure in public forums
(c) tend to lose his composure in public forums
(d) tends to lose their composure in public forums
Answer: (b)
Hint: "Many a" takes a singular verb and pronoun → "tends," "his."

4. It is imperative that the newly proposed reforms *is evaluated thoroughly before implementation.*
(a) is evaluated thoroughly before implementation
(b) should evaluate thoroughly before implementation
(c) are evaluated thoroughly before implementation
(d) evaluated thoroughly before implementation
Answer: (c)
Hint: "Reforms" is plural → verb should be "are evaluated."

5. Neither the executive board nor the CEO *are willing to approve the merger without a detailed risk analysis.*
(a) are willing to approve the merger
(b) were willing to approve the merger
(c) is willing to approve the merger
(d) has been willing to approve the merger
Answer: (c)
Hint: With "Neither...nor," the verb agrees with the subject closest to it → "CEO" (singular) → "is willing."

6. The success of the sustainability initiative *depend on consistent engagement from all departments and stakeholders.*
(a) depend on consistent engagement
(b) depends on consistent engaging
(c) depends on consistent engagement
(d) is depended on consistently engaging
Answer: (c)
Hint: Subject "success" is singular → use "depends."

7. The director's decision to postpone the premiere *has met with resistance from both critics and fans alike.*
(a) has met with resistance from both critics and fans alike
(b) have met with resistance from both critics and fans
(c) had met with resistance of both critics and fans
(d) has been meeting resistance from critics and fans
Answer: (a)
Hint: "Decision" is singular, so "has met" is correct; "both...and alike" is redundant but idiomatic.

Instructions (Q.8 to Q.10): Choose the most appropriate word to **fill in the blanks.**

(KPIT)

8. The success of the new product launch was largely due to the _____ efforts of the marketing team, who worked tirelessly for months.

(a) lackadaisical
(b) concerted
(c) negligent
(d) sporadic
Answer: (b)
Hint: "Concerted" means coordinated and focused – the right fit for a successful outcome.

9. As the debate grew more intense, the speaker tried to _____ the situation by appealing to reason and common ground.
(a) intensify
(b) exacerbate
(c) mitigate
(d) dissolve
Answer: (c)
Hint: "Mitigate" means to make less severe – suitable for calming a tense debate.

10. The CEO's statement was so _____ that it left the press confused about the actual direction of the company.
(a) forthright
(b) ambiguous
(c) transparent
(d) lucid
Answer: (b)
Hint: "Ambiguous" means unclear or open to multiple interpretations.

Operating System Semaphore- Critical Section Problems:- 5% Weightage

Critical Section Problem

When multiple processes or threads share **common resources (e.g., memory, files, devices)**, they must **not access them simultaneously** in a way that causes inconsistency.The **critical section** is the part of code where the shared resource is accessed.

Conditions for a correct solution

A good critical section mechanism ensures:

Condition	Meaning
Mutual Exclusion	Only one process is in the critical section at a time.
Progress	If no process is in the critical section, one of the waiting processes should be allowed to enter.
Bounded Waiting	A process should not wait forever to enter its critical section. There's a limit on how many times others can enter before it.

Goal: Avoid race conditions (inconsistent data due to concurrent access).

Semaphore

A **semaphore** is a synchronization tool (an integer variable) to solve the critical section problem. It is accessed only via two atomic operations:

Operation	Description
wait(S) or **P(S)**	Decrement S. If S < 0, process waits (blocks).
signal(S) or **V(S)**	Increment S. If there are waiting processes, one is unblocked.

Atomic → Operations happen completely without interruption.

Types of semaphores

Type	Value	Usage
Binary Semaphore	0 or 1	Like a lock — mutual exclusion
Counting Semaphore	≥ 0	Controls access to multiple instances of a resource

Computer Networks Subnetting, CIDR:-5% Weightage

Subnetting

Subnetting is the process of dividing a single IP network (or block) into **smaller, manageable sub-networks (subnets)**.

It helps:

- Efficiently use IP addresses
- Improve network performance & security
- Simplify routing

Subnet Mask

- A subnet mask separates **network part** and **host part** of the IP address.
- Example:

  makefile
  CopyEdit
  IP: 192.168.1.10
  Mask: 255.255.255.0 → /24

A **1** in the mask = network bit

A **0** in the mask = host bit

Mask	Slash Notation	Hosts per subnet
255.255.255.0	/24	254 hosts
255.255.255.128	/25	126 hosts
255.255.255.192	/26	62 hosts

Subnet Formula

Number of subnets = 2^borrowed bits
Number of hosts = 2^remaining host bits - 2
(-2 accounts for **network** and **broadcast addresses**)

Database Management System Subqueries, with all the clauses:-5% Weightage

What is a Subquery?

A subquery **is a SQL query that is** nested inside another query **(main or outer query).**
Subquery returns data **used by the outer query.**

Subqueries can appear in:

- SELECT
- FROM
- WHERE
- HAVING
- INSERT
- UPDATE
- DELETE

Types of Subqueries

Type	Description
Single-row subquery	Returns one value/row
Multiple-row subquery	Returns multiple values/rows
Multiple-column subquery	Returns multiple columns
Correlated subquery	References column from outer query (runs repeatedly for each outer row)

Subquery with Clauses

Subquery in WHERE

Used to compare a value to result of subquery.

SELECT name

FROM emp

WHERE salary > (SELECT AVG(salary) FROM emp);

Subquery in FROM

Subquery acts as a temporary table (derived table).

SELECT AVG(salary)

FROM (SELECT salary FROM emp WHERE dept = 'IT') AS temp;

Subquery in SELECT

Subquery returns a value to display in the result.

SELECT name,

(SELECT MAX(salary) FROM emp) AS max_sal

FROM emp;

Subquery in HAVING

Filters groups based on subquery result.

SELECT dept, COUNT(*)

FROM emp

GROUP BY dept

HAVING COUNT(*) > (SELECT AVG(cnt) FROM (SELECT COUNT(*) AS cnt FROM emp GROUP BY dept) AS t);

Data Structures & Algorithms: Singly/Doubly Linked List – basic operations:-5% Weightage

Singly Linked List (SLL)

A **linear data structure** where each node has:

[data | next]

- data: stores the value.
- next: points to the next node in the list.
- The last node's next = NULL.
  Can only be traversed **in one direction** (from head to end).

Basic operations in SLL

Operation	Description
Insertion at beginning	New node points to current head → head is updated to new node
Insertion at end	Traverse to last node → its next points to new node

Operation	Description
Insertion at position	Traverse to previous node → adjust next pointers
Deletion	Remove node by adjusting previous node's next
Traversal	Visit nodes one-by-one from head to NULL