

Mock 01 — Answers and Review

Aptitude

Q	Answer	Key method
1	C	20% of 250 = 50
2	B	$1.10 \times 1.20 = 1.32$
3	B	$120/800 = 15\%$
4	B	2/5 of 75
5	C	total 60; remove 8; 52/4
6	B	$10 \times 12 = 15 \times \text{days}$
7	B	54 km/h = 15 m/s; 150/15
8	C	PRT/100
9	B	3 favourable out of 8
10	D	2-cycle remainder $27 \bmod 4 = 3$
11	B	either takes singular verb
12	C	interested in
13	B	singular collective noun and singular reference
14	C	earlier past action uses past perfect
15	B	meticulous = very careful
16	C	abundant opposes scarce
17	B	senior to
18	A	European begins with consonant sound "yu"
19	B	future passive = will be + past participle
20	C	both clauses directly support it
21	C	squares $2^2, 3^2, 4^2, 5^2, 6^2$
22	C	north/south cancel
23	B	A lies inside B, and B cannot overlap C

Q	Answer	Key method
24	A	each letter +1
25	C	mother's relation to both siblings
26	D	seats D, B, A, C, E
27	D	no rose/fading overlap is forced
28	B	minute hand 180°, hour hand 105°, difference 75°
29	C	north/south cancel, east remains
30	B	first letter forward, second backward

Technical

Q	Answer	Key fact
1	B	queue is FIFO
2	C	BST inorder is sorted
3	A	average hash lookup $O(1)$
4	B	merge sort fits linked lists
5	B	BFS for unweighted shortest path
6	C	threads share process address space
7	B	Round Robin uses quantum
8	B	page not in RAM = page fault
9	C	no preemption, not preemption allowed
10	B	paging uses fixed size
11	B	microcontroller integrates components
12	B	ADC is analogue to digital
13	B	watchdog handles hangs
14	C	I2C is two-wire/addressed
15	A	UART is async serial
16	B	TCP is reliable/ordered
17	B	UDP has no guarantee
18	B	routing at network layer

Q	Answer	Key fact
19	C	DNS 53
20	B	/27 gives 32 total, 30 traditional usable
21	B	ARP IP to MAC locally
22	B	DHCP assigns IP configuration
23	C	401 authentication needed/failed
24	B	Waterfall is sequential
25	B	Sprint
26	B	frequent merge plus automated build/test
27	A	regression checks old behaviour after change
28	B	just below/at/at/just above bounds
29	A	Selenium UI automation
30	B	severity is impact

Pseudocode

Q	Answer	Trace
1	B	$2+4 = 6$
2	B	305 reverses to integer 503
3	C	$4 \times 3 \times 2 \times 1$
4	B	arithmetic swap
5	D	$1 \rightarrow 3 \rightarrow 9 \rightarrow 27$
6	C	repeat body: $2 \rightarrow 4 \rightarrow 6$
7	B	equality branch
8	B	10,13,16 give remainder 1
9	D	n times log n
10	B	temporary variable swap
11	C	$9+2+7$
12	C	$5+3+1$
13	C	$2+4+6+8$

Q	Answer	Trace
14	C	$14 \bmod 3 = 2$
15	B	$9 \text{ DIV } 4 = 2$, not >2
16	A	update order: 0,1,3
17	B	$20 \rightarrow 10 \rightarrow 5 \rightarrow 2 \rightarrow 1 \rightarrow 0$: five bodies
18	B	doubling loop
19	A	x is neither <5 nor >12
20	C	positive odd n moves away from zero

Coding review

Problem 1

Use a hash map from value to earlier index.

For each index i/value x:

1. needed = $T - x$.
2. If needed exists in map, print map[needed], i.
3. Otherwise store $x \rightarrow i$.

Time $O(n)$ average; space $O(n)$. Ensure equal values use distinct positions: check map before inserting current item.

Problem 2

Use prefix sums of digit values:

1. prefix[0] = 0.
2. prefix[i+1] = prefix[i] + digit value at i.
3. Check even lengths from n down to 2.
4. For each start, compare:
5. firstHalf = prefix[start+half] – prefix[start]
6. secondHalf = prefix[start+length] – prefix[start+half]
7. First valid length is maximum.

For $n \leq 2000$, the resulting $O(n^2)$ scan is generally appropriate. Be precise about character-to-digit conversion.

Score review

Section	Score	Target	Main error type
Aptitude	/30	22+	

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Technical	/30	23+	
Pseudocode	/20	16+	
Coding	/2	1 complete minimum	

Copy your misses into [[10_Templates/Error_Log|Error log]] before opening another note.