Zonal Informatics Olympiad, 2026

Solutions

1. Sum of $m + M$, minimum and maximum number of distinct stars

   (a) $N = 3$, $A = [2, 1, 2]$
   Answer: 8

   (b) $N = 6$, $A = [1, 2, 3, 4, 2, 1]$
   Answer: 17

   (c) $N = 12$, $A = [4, 1, 3, 5, 2, 2, 3, 1, 5, 6, 2, 1]$
   Answer: 49

2. Number of non-empty good subsequences

   (a) $N = 8$, $K = 0$, $A = [1, 1, 2, 3, 3, 3, 4, 4]$
   Answer: 14

   (b) $N = 8$, $K = 4$, $A = [1, 2, 3, 4, 5, 6, 7, 8]$
   Answer: 238

   (c) $N = 15$, $K = 9$, $A = [1, 1, 2, 3, 4, 4, 5, 6, 8, 10, 10, 10, 11, 12, 14]$
   Answer: 32678

3. Sum of all m that are good with respect to N

   (a) $N = 12 = 2^2 \cdot 3$
   Answer: 29

   (b) $N = 60 = 2^2 \cdot 3 \cdot 5$
   Answer: 490

   (c) $N = 18900 = 2^2 \cdot 3^3 \cdot 5^2 \cdot 7$
   Answer: 40824017

4. Sum of scores of all subarrays

   (a) $N = 6$, $A = [1, 2, 3, 3, 2, 1]$
   Answer: 42

   (b) $N = 10$, $A = [1, 1, 2, 1, 2, 2, 1, 2, 1, 2]$
   Answer: 142

   (c) $N = 20$, $A = [2, 3, 2, 4, 3, 3, 3, 4, 1, 2, 2, 1, 1, 1, 3, 1, 1, 6, 4, 4]$
   Answer: 842

Marking

The question paper carries 80 marks, broken up into four questions of 20 marks each. Each question has three parts. *If you solve all three parts correctly, you get 20 marks for that question.* Otherwise, you get 5 marks for each part that you solve correctly.

Qualifying cutoff

Male students

- Std 12: 50
- Std 11: 45
- Std 10: 40
- Std 9: 35
- Std 8: 30
- Std 7 and below: 30

Female students

- Std 12: 35
- Std 11: 30
- Std 10: 25
- Std 9: 20
- Std 8: 20
- Std 7 and below: 20

Score distribution

Score	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5	0
Number at or above this score	7	7	13	14	29	50	66	95	139	201	248	301	348	393	473	558	612