

Common Mistakes Major

Q2:

a)

1. overlooked the boundary conditions like consider $A = [0]$, in most of the solutions answer returned is 1, but answer should be 0.
2. The failure to specify the base case or final answer in recursive solutions.
3. It's important to note that algorithms with a time complexity $O(\log n)$ is expected, so marks have been deducted, for those who haven't done that.

B)

Including common mistakes of part-a, here is another one specific to Q2 part b:

1. Those who have used median approach to solve the problem, it is important to note that when median element is greater than or equal to $(n/2)$, then the h-index is at least $n/2$, so you recurse on the elements which are less than median, to improve the value of h-index, and vice versa. But many of them have done the reverse way, so marks have been deducted for that.

Q3

1. Greedy approach / Equating the problem to finding the costliest-independent set does not work as two independent sets cannot be added together (since there may be an edge between two different independent sets.)
2. During creation of the augmentation graph of G , some students have given the vertices from $\{s, t\}$ as infinite capacity and edges from L to R as $c_u + c_v$ which does not work.

Q4:

1. Reduction in the wrong direction, that is reducing Qasim's problem to another NP-Hard problem, which won't imply NP-Hardness.
2. Missing verifier to depict NP-Membership of the problem