Problem 1  \([4+4+4+4+4=20 \text{ marks}]\)
- For part b), a few students missed the domain for n.
- For part d) and e), a few students proved for a specific c value instead of for any c.

Problem 2  \([4+4+4+4=16 \text{ marks}]\)
- Generally some students missed steps or complete mathematical proof.
- For part d), a few students didn’t know how to treat g(n).

Problem 3  \([4+4+4=12 \text{ marks}]\)
- For part a), a few students thought part a) is true and gave an incorrect proof.
- For part c), a few students gave an incorrect or incomplete proof.

Problem 4  \([4+4+4+4=16 \text{ marks}]\)
- For part c), a few students gave an incorrect answer as \(O(n^3)\) or \(O(n^4)\). I would suggest that they go over the property of harmonic series.
- For part d), a few students incorrectly approximated ceiling(log \(i\)) to log \(i\).

Problem 5  \([4+4=8 \text{ marks}]\)
Generally well done!