


| National University of Computer and Emerging Sciences, Lahore Campus | | | | |
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|  | Course: | Discrete Structures | Course Code: | CS-1005 |
| | Program: | Computer Sciences | Semester: | Fall 23 |
| | Due Date | 27-09-2023 | Total Marks: | 10 |
| | | | Page(s): | 1 |
| | Section: | J | | |
| | Evaluation | Assignment-1 | | |
| Instruction/Notes: | | Solve assignment on A4 page and submit on due date | | |

(1) Use rules of inferences to show that the hypothesis “Randy works hard”, “If Randy works hard, then he is dull boy” and if Randy is a dull boy the he will not get the job imply the conclusion “Randy will not get the job”.

(2) Let p,q are the propositions:

- (i) Grizzly bears have been seen in the area.
- (ii) Hiking is safe on the trail.
- (iii) Berries are ripe along the trail.

Write these propositions using p, q, r and logical connectives

- (i) Berries are ripe along the trail, but grizzly bears have not been seen in the area.
- (ii) Grizzly bears have not been seen in the area and hiking on trails is safe but barriers are ripe along the trail.
- (iii) If berries are ripe along the trail, hiking is safe iff grizzly bears have not been seen in the area.
- (iv) It is not safe to hike on the trail, but grizzly bears have not been seen in the area and the berries along the trail are ripe.
- (v) For hiking on the trail to be safe it is necessary but not sufficient that berries not be ripe along the trail ad for grizzly bears not have been seen in the area.

(3) Sharky a leader of the underworld, was killed by one of his own band of four henchmen, Detective sharp interviewed the men and determined that all were lying except for one. H deduced who killed Sharky on the basis of the following statements:

- (i) Socko: Lefty killed Sharky (ii) Fats: Muscles did not killed Sharky.
- (iii) Lefty: Muscles was shooting carps with Socko when sharkly was knocked off.
- (iv) Muscles: Lefty didn’t kill Sharky.

Who did kill Sharky????

