Artificial Intelligence
Assignment-3
WA+PA

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B TECH

Q-3 Goal → Organize Seminar. AND Invite Professor(X).

Initial → Event Chart(), Request Letters, Preparation Plans

I Action: Communicate with Professor(x)
Preconditions →
Event Organizing Dates()
Effect →
Confirmation Dates ()

I Communicate with professor to get dates he's available on. from the given dates.

II Action: Req Letter Admin.
Precondition →
Dates Ready ()
Rooms Available()
Event Chart Ready()
Plans Ready ()
Effect →
Approval — I ()

II Receives Approval I from Admin.

III Action: Req Money Account()
Precondition →
Have Admin Approval() → Have Approval — I
Effect →
Receive Amount ()

IV Action: Notice FMS:
Precondition →
Admin Approval()
Requirement ()
Effect →
Confirmation ()

⇒ Requirements from FMS Department.

V Action Notice Security.
Precondition →
Admin Approval ()
Requirement ()
Effect:
Confirmation ()

VI Action
Notice IT Department(s).
Precondition:
Have Admin Approval(s)
Requirements(s)
Effect →
Confirmation(s)

VII Req For Public Announcements(s)
Precondition:
Have Admin Approval II (s)
Have Money (s)
Have FMS Confirmation(s)
Have IT Confirmation(s)
Have Security Confirmation(s)
Effect:
Final Approval (s).

VIII Action
Invitations
Precondition →
Have Final Approval(s)
Invitations Ready(s)
Effect: →
Send Public Invitation(s)
Send Invitation Professor (x).

In Short the Process →
① Organizer contact Professors, receive dates on which Professor x is available.
② Request for Admin department Approval.
③ on Receiving Admin department Approval, Request for the requirement from different departments.
④ Req for Money. (Poster Printing etc).
⑤ Send Notice to various Departments and receive their confirmation.
⑥ After having all confirmation from various departments send Approval request to Admin for Public Announcements
⑦ Invite Public & Professor(x)

Q-4 Converting Statements to FOL:
① ∃x, ∃y Cheropodium(x) ∧ ∃(y) Radis(y)
② ¬ Likefilling → ¬ ordens
¬ ordens → ¬ Eat (s)
¬ Eat (s) → Hungry
③ → [Eat (Cheropodium x)
④ → [likefilling (Cheropodium, Radis) → ¬ Eat.]
⑤ Hungry

On ~~Adding~~ (1) (2) & (3) we get.

→ Chenopodium(x) ∧ ~~Radish~~

→ ¬ LikeFilling(C, R) ¬ Eat ⇒ LikeFilling(C, R) ∨ ¬ Eat.

→ ~~LikeFilling(C, R) ∧~~ ¬ Eat.

Q-4 Converting Statements to FOL

(1) ∃x Chenopodium(x) ∧ ~~∃x~~ ∃(x) Radish(x).

(2) ¬ LikeFilling ∧ ¬ Ordan ∧ ¬ Eat

(3) ¬ Eat ∧ Chenopodium ∧ Radish ∧ ¬ LikeFilling.

Q-4

(1) ∀x x is Chenopodium ∨ x is Radish

(2) ¬ LikeFilling ∧ ¬ Ordan ∧ ¬ Eat.

(3) by Chenopodium ∧ ¬ Eat.

by Radish ∧ ¬ Eat.

(4) ~~Hungry~~ ¬ Eat ∧ ⇒ Hungry.

~~On adding~~

from (1) & (3) we get.

¬ Eat. (because all paratha he doesn't like them)

from (2) & (3) (5)

we get that he/she doesn't ordan & doesn't eat

∴ Stays Hungry.

Q-1

(a)

(b) $\neg$ ~~Cat~~ $\forall x$ ~~a~~ Cat(x) $\wedge$ ~~Doesn't like~~ $\neg$ like Smart Rat

(c) $\forall (x)$ { Class Any (Eng), x) > Class any (Math) } xy

(d) $\forall x$ { Diamond (x) $\wedge$ Platinum (x) $\rightarrow$ Precious. }

(e) $\neg$ Submit Assignment. $\rightarrow$ [Submit Assign $\rightarrow$ Pass Course]

(f) ~~$\forall x, y$ [Shark(x) $\vee$ Whale Attack(y)~~ .

$\forall x, y$ [(Hungry $\rightarrow$ Shark Attack(x) $\vee$ Whale Att) $\vee$ (Angry $\rightarrow$ Shark Attack(x) $\vee$ Whale Attack(y)

(g) ~~$\neg \exists$ Rish~~

$\neg$ [$\exists x$ Fish(x) $\wedge \neg$ Swim]

(h) ~~$\forall$~~

(i) $\exists (x)$ fan $\wedge$ $\forall x$ { Superhero(x) $\wedge \neg$ Killer

(j) $\exists (x)$ Shopkeeper(x) $\wedge$ mentor and $\wedge$ sell

(k) ~~Many Bat~~

$\exists x$ { Many Bat $\wedge$ cardie(x) $\wedge \forall z$ Tim } $\wedge \forall y$ { Many Bat $\wedge$ Carding (y) $\wedge \forall z$ Tim }

$\wedge \forall y$ [Many Bat $\wedge$ Card(y) $\wedge \forall z$ Tim]

(2) Goal: Reach from State initial to Final, AND Break all X objects. AND Place

Initial: all Q Objects.
~~Start~~ V Arm at TOP-Left AND H Arm at Bottom Right.

Action BreakObject.
Precondition →
exist a Box (x).
Arm is V (y).
Effect
Break x object (x).

Move (x, y, Q).
Precondition:
~~of Object~~
Q lifted (x)
Arm x (x) } → Both Arm Present.
Arm y (y).
Current location (x)

Effect
Dropbox at Location (y).

Action: Lift object.
Precondition →
Arm x (x)
Arm y (y)
object Q Present (x).
Effect:
Object Q in ~~Both~~ touching Both Arms (x).

Object is lifted using Both arms