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M.A 1st Semester Examination-2020

Subject: Philosophy

Paper: 102

Full marks: 40 Time: 2 Hours

Answer any two questions of the following: 20X2=40

1. Symbolize each of the following propositions. In each case use the suggested notation. 10x2=20

i) If something is missing, then if nobody calls the police someone will be unhappy. (Mx: x is missing, Px: x is a person, Cx: x calls the police, Ux: x will be unhappy)

ii) If any bananas are yellow, they are ripe.
(Bx: xis a banana, Yx: x is yellow, Rx: x is ripe)

iii) If something is damaged, but nobody is blamed, the tenant will not be charged for it.
(Px: x is a person, Bx: x is blamed, Cx: x will be charged to the tenant)

iv) If any husband is unsuccessful, then if some wives are ambitious he will be unhappy.
(Hx: x is a husband, Sx:x is unsuccessful, Wx: x is a wife, Ax: x is ambitious, Ux: x will be unhappy)

v) If there are any survivors and only women are survivors, then they are women.
(Sx: x is a survivor, Wx: x is a women)

vi) If all ripe bananas are yellow, some yellow things are ripe.
(Rx: x is ripe, Bx: x is banana, Yx: x is yellow)

vii) If any officer is present, then either no majors are present or he is a major.
(Ox: x is an officer, Px: x is present, Mx: x is a major)

viii) If every position has a future and no employees are lazy, then some employees will be successful.
(Px: x is a position, Fx: x has a future, Ex: x is an employee, Lx: x is lazy, Sx:x will be successful)

ix) If nothing is damaged, nobody will be blamed.
(Dx: x is damaged, Px: x is a person, Bx: x will be blamed)

x) If any employees are lazy and some positions have no future, then some employees will not be successful.
(Ex: x is an employee, Lx: x is a lazy, Px: x is a position, Fx: x has a future, Sx: x will be successful)

2. Construct a formal proof of validity for each of the following arguments: 5x4=20

i) (∃x) UxƆ (Y)[(Uy v Vy) ƆWy]

. (∃x) Ux· (∃x)Wx ∴/ (∃x) Ux·Wx

ii) (∃x) Gx v (Y)(GyƆ Hy)

(x) (IxƆ ~ Gx) ∴/ (x)(GxƆIx) Ɔ(Y)(GyƆHy)

iii) (∃x) Jx v (∃y) Ky

(x)(Jx ƆKx) ∴/ (∃y) Ky

iv) (∃x) XxƆ (y)(YyƆZy)

∴/ (∃x) (Xx·Yx)Ɔ ((∃y)(Xy·Zy)

v) All radioactive substances either have a very short life or have medical value. No uranium isotope that is radioactive has very short life. Therefore, if all uranium isotopes are radioactive, then all uranium isotopes havew medical value. (Rx: x is radioactive, Sx: x has very short life, Mx: x has medical value, Ux: x is a uranium isotope)

3. Prove that each of the following arguments is invalid: 5x4=20

i) (x) (∃y) (Fx ≡ Gy)/∴ (∃y)(x)(Fx≡ Gy)

ii) (x) (y)[AxƆ(By v Cy)]

(z){[(y) By v (y) Cy]ƆDz} /∴ (∃x) (∃z)(AxƆ Dz)

iii) (∃x) (∃y)(YxƆ Zy)

(∃y) (z)(ZyƆ Az) /∴ (∃x) YxƆ (z)Az

iii) (x) [QxƆ(Rx·Sx)

(∃x)(Tx·~Rx)

(∃x)(Tx ·~Sx)/∴(x) (QxƆTx)

iv) (x) NxƆ(∃y)Oy

(y) OyƆ (∃z)Pz / ∴ (∃x)NxƆ(z) Pz

4. Construct demonstration for each of the following: 5x4=20

i) (∃x)(Fx·Q)≡[(∃x)Fx·Q]

ii) [(∃x)FxƆ (∃x)Gx] Ɔ (∃x)(FxƆGx)

iii) (∃y)[FyƆ (x) Fx]

iv) (x) (∃y) (Fx v Gy)≡ (∃y)(x)(Fx v Gy)

v) [(∃x)FxƆ(∃y)Gy]≡ (x) (∃y)(FxƆGy)

5. Answer the following questions. 5x4=20

i) Distinguish between rules of Inference and rules of replacement.

ii) Explain the rule of Existential instantiation.(EI)

iii) Distinguish between free variable and bound variable.

iv) What is the definition of Conditional Proof (CP)? Give example.

v) Distinguish between proposition and propositional function.