CS 302
REMOTE QUIZ 10

27 May, 2021

Duration : 20 minutes

Closed Notes , Books and all Electronic Devices
Do not forget to write your name on your paper !

QUESTION

(a) (4 pts) State the definitions of a deterministic Turing machine to **decide** *and to* **semidecide a language L** *and to* **compute a function** $f : \Sigma_0^* \rightarrow \Sigma_0^*$

(b) (6 pts) **(i)** *State the difference between the languages* $L_1 = (\omega \in \Sigma_0^* \mid \omega = \omega^R)$ *and* $L_2 = (\omega \in \Sigma_0^* \mid \omega = u.u^R ; u \in \Sigma_0^*)$ *where* v^R *denotes the string* v *written in reverse.* **(ii)** *Construct single tape DTMs* M_1 *and* M_2 *shown in graphical or tabular form to decide* L_1 *and* L_2 .