TASK 1 – Do File

```
*1.a.i) Estimate effect of smoking on risk of death
logit death smoking
logistic death smoking

*1.a.ii) predicted probability graph
logit death i.smoking age
margins smoking, at (age=(10(10)70)) atmeans vsquish post
marginsplot

*1.b) Linearity assumption / statistical test / decide which is best model
logistic death i.smoking i.age
logistic death i.smoking age
logistic death i.smoking
est store model_1
logistic death i.smoking age
est store model_2
lrtest model_1 model_2
testparm i.smoking

*Linear Quadratic Model
gen agesq=age*age
logistic death smoking age agesq
est store c
quietly: logistic death smoking age
est store e
lrtest c e

*1.c.i) Add systolic bp
logistic death smoking age agesq i.sbpgrp
*1.c.ii) statistical test
```

```
quietly:logistic death smoking age agesq i.sbpgrp
est store d
lrtest e d
```

TASK 2 – Do File

```
*2.a) Describe variables
describe
codebook
tab covid pref, row chi
sort pref
by pref:sum age
summarize, d
*2.b) Describe bivariate relationship between 3 variable
tab pref covid, col

*2.c)Devise sutitable statistical model
mlogit pref covid, rrr baseoutcome (3)

*2.d) Make a graph (predicted Probabilities)
mlogit pref covid,
predict p_phone p_video_link p_text_chat
tab p_phone covid
graph bar p_phone p_video_link p_text_chat, over(covid)
legend(label( 1 "Phone" 2"Video Link" 3"Text Chat"))

*2.e)Adjust for patient age
mlogit pref covid, rrr baseoutcome (3)
est store model_3
mlogit pref covid age, rrr baseoutcome (3)
est store model_4
lrtest model_3 model_4
```

*2.f) Combined 2 variable // which is the best model

*combined variable = 1

*Text chat = 2

gen pref1 = pref

recode pref1 (1 2 = 1) (3 = 2)

mlogit pref1 covid age, rrr baseoutcome (2)

mlogit pref covid age, rrr baseoutcome(3)

TASK 3 – Do File

*3.a) Describe Data

describe

codebook

summ fall - timedead

tab1 limitil fall dead srh sex education

drop if limitil==. // Drop missing data

drop if education==.

drop if srh==.

sum timedead

browse if timedead==0 // Browse for error

drop if timedead==0

tab dead fall, row chi

tab dead sex, row chi

tab dead agegp, row chi

tab dead limitil, row chi

tab dead education, row chi

tab dead srh, row chi

sort dead

by dead:sum timedead

sum timedead

*3.b) Association

stset timedead, failure(dead)

```
stsum
stsum, by(fall)
stci, by(fall)
sts test fall
sts graph, by(fall) risktable xlabel(0(2)10) failure // Legend Edit in Graph Edit window

*3.c) Adjusting for potential confounding factors
stcox i.sex
stcox i.agegp
stcox i.limitil
stcox i.education
stcox i.srh
stcox i.sex i.agegp limitil i.education i.srh

*3.d) Check validity of assumption (A)
stphplot, strata(sex) adjust(agegp limitil education srh)
stphplot, strata(agegp) adjust(sex limitil education srh)
stphplot, strata(limitil) adjust(sex agegp education srh)
stphplot, strata(education) adjust(sex agegp limitil srh)
stphplot, strata(srh) adjust(sex agegp limitil education)

*Proportional hazard assumption (B)
stcox i.sex i.agegp limitil i.srh i.education, schoenfeld(sc*) scaledsch(ssc*)
estat phtest, log detail
```