



QP CODE: 25050523



Reg No :

Name :

MSc DEGREE (CSS) EXAMINATION DECEMBER 2025

First Semester

M Sc ACTUARIAL SCIENCE

Core Courses - AS010105 - ACTUARIAL COMPUTING - I

2019 Admission Onwards

94349DF5

Time: 3 Hours

Weightage: 30

(Answer any **Three** questions. Each question carries a weight of 10)

1. Write R code for following questions
 1. Simulating a random sample of 180 values from the binomial distribution with $n=35$ and $p=0.5$.
 2. What is $P(X \leq 3)$ when X has $\text{Bin}(35, 0.006)$ distribution.
 3. Simulating a random sample of 270 values from a Poisson distribution with $\lambda = 4$.
 4. Generate a random sample of 100 values from a Normal Distribution with mean 2 and standard deviation 4.
 5. Find 20 random values from a sample of 170 with probability of 0.4.
2. Sample of 100 claims for damage due to water leakage on an insurance company's household contents policies might be as follows.

243 306 271 396 287 399 466 269 295 330
425 324 228 113 226 176 320 230 404 487
127 74 523 164 366 343 330 436 141 388
293 464 200 392 265 403 372 259 426 262
221 355 324 374 347 261 278 113 135 291
176 342 443 239 302 483 231 292 373 346
293 236 223 371 287 400 314 468 337 308
359 352 273 267 277 184 286 214 351 270
330 238 248 419 330 319 440 427 343 414
291 299 265 318 415 372 238 323 411 494

- a. Summarise these data using any graphical method.
 - b. Plot the value and give explanation.
 - c. Draw stem and leaf diagram of these given data.
 - d. Calculate mean and median of these data.
3. Jibin got a deal to lend 70,000 today and in return he will receive twenty-five annual payments of 7000 each. The annuity will start five years from now and the effective rate of interest will be 5%. Determine whether the deal is a feasible for him if the payment is
 1. Ordinary annuity
 2. Annuity due





4. a) James invest 3000 at 8% interest rate compound monthly and he want to know the value of his investment after 8 years
 1. using normal method
 2. using excel function
- b) Find the future value of 3000 investment after 5years at annual interest rate 7% compound weekly.
 1. using normal method
 2. using excel function
5. Consider the case of tossing an unbiased coin
 1. Create a sample of 100 numbers which are incremented by 1
 2. Create the density distribution for this data.
 3. Plot the graph for this sample.
 4. Save the file.
 5. Find the probability of getting 36 or less heads from 61 tosses of a coin.
 6. How many heads will have a probability of 0.25 will come out when a coin is tossed 65 times.
 7. What is $P(X \leq 3)$, when X follows a Bin (30, 0.001) distribution?

