UNIVERSITAS ISLAM INDONESIA
FAKULTAS MIPA-UII
Jl. Kaliurang Km. 14,5 Jogjakarta

MIDTERM EXAM
ACADEMIC YEAR 2020/2021

Course	: **Life Insurance 2**
Study Program/Class	: **Statistics/ A**
Day/Date	: **Monday/ November,2nd 2020**
Time	: *Take Home* **(1 x 24 hours)**
Lecture	: **Abdullah Ahmad Dzikrullah, S.Si, M.Sc.**
Exam Description	: **Opened Book & Laptop**

> PLO : *Mastering several statistical methodologies (methods and models) for problem solving in several fields*
> CO : *Students are able to master and explain about life insurance*
> *Students are able to master and explain about life insurance premiums.*
> *Students are able to explain the concept of life insurance reserves*

Look carefully at the following story questions and then answer the questions related to the story using Microsoft Excel and attach the actuarial formula in the answer sheet!

Paijo Diningrat is a noble descendant of the owner of the famous Batik industry in Yogyakarta. The 45-year-old man has a unique habit of traveling around Indonesia from Sabang to Merauke. For about five years, Mr. Paijo's family has been in a hobby that sometimes poses a threat to the safety of his life. Once, he had an incident while climbing a cliff in the inland hills of Komodo Island. Based on a hobby that can be extreme, Mr. Paijo, who already has a son, plans to join a life insurance program at PT. Asjiraya2, along with all family members, so that they can always provide a sense of security.

Mr. Paijo wants to take life insurance. Meanwhile, the company stipulates that insurance follows the 2011 Indonesian Mortality Table, an interest rate of 5% with a significant compensation of 200 million. Based on these conditions, Mr. Diningrat prefers to postpone his insurance for the next five years by paying it directly without paying installments.

His son, Parto, tends to choose 17-year term insurance, with the condition that the compensation decreases per year. The 23-year-old man is obliged to comply with company regulations, namely: discount function (v) of 92.5% with compensation of 75 million, and following the 2011 Indonesian Mortality Table. Parto plans to make payments in installments at the end of each year.

Pak Paijo's wife, Mrs. Paijah, also wants the same as her husband. The 37-year-old mother chose 15-year endowment insurance. The insurance company determines that the insurance follows the 2011 Indonesian Mortality Table with an interest rate of 3%, compensation of 100 million. Bu Paijah wants to pay it in installments at the beginning of the year for the next ten years without delay.

Questions :

Indicator: students are able to calculate the value of net premium

    1. (Score 15) How much is the net premium that Paijo Diningrat has to pay?

Indicator: students are able to calculate the amount of the annuity and the value of the annual premium

    2. (Score 20) Calculate the amount of the life annuity and the value of the annual premium that Parto has to pay!

    3. (Score 20) How much life annuity and premium value must be paid at the end of each year by Mrs. Paijah?

Indicator: students are able to calculate the value of life insurance reserves

    4. (Score 20) Calculate the 7th reserve for Mrs. Paijah using the retrospective method !

    5. (Score 25) Calculate the 12th reserve for Bu Paijah using the prospective method !

The verification of Midterm Exam, Odd Academic Year 2020/2021				
The suitability of the problems with CO	**The Completeness of the problems information**	**Verifier**	**Verification date**	**Sign**
Suitable/~~Less suitable~~/ ~~Not Suitable~~	Complete/~~Less Complete/Not Complete~~	Science cluster coordinator	31-Okt-2020	