**P.R.GOVT. COLLEGE (AUTONOMOUS), KAKINADA.**

**III B.SC ACTUARIAL SCIENCE/FIFTH SEMESTER - 2018-19**

**III B.SC PAPER V**

 **COURSE: BASIC OF LIFE CONTINGENCIES-I**

**SEMESTER-V**

**Total Hrs. of Teaching-Learning:45 @ 3 h/Week Total credits 3**

**Unit-I**

• **Introduction to Life Insurance.** (2L)

Meaning and definition of life insurance features, Types of life insurance, principles

of life insurance, Terminology in insurance premiums.

**Unit-ii**

• **Survival Distributions and Life Tables:** (13L)

Probability for the Age-at-Death, the survival function, time- until-death for a person

aged *x,* curtate-future-lifetime, force of mortality.

Life tables, relation of life table functions to the survival function, life table example.

The deterministic survivorship group, other life table functions, assumptions for

fractional ages, some analytical laws of mortality, some analytical laws of mortality,

select and ultimate tables.

**Unit-iii**

**• Life Insurance:** (15L)

Insurances payable at the moment of death: level benefit insurance, endowment

insurance, deferred insurance, varying benefit insurance.

Insurances payable at the end of year of death, relationships between Insurances

payable at the moment of death and the end of year of death, recursion equation,

commutation functions.

**Unit-iv**

• **Life Annuities:** (15L)

Single payment contingent on survival, continuous life annuities, discrete life

Annuities, life annuities with mthly payments, commutation function formulas for

annuities with level payments, varying annuities, recursion equations, complete

Annuities-immediate and apportionable annuities-due.

**Text Books**

1.Bowers, N. L., Gerber, H.U., Hickman, J.C., Jones, D.A., Nesbitt, C.L.(1986),

 Actuarial Mathematics, The society of actuaries.

**Books for References**

1. David, C. M., Dickson, Mary R. Hardy and Howard, R. waters.(2009). Actuarial

 Mathematics for Life Contingent Risks. Cambridge University Press.

2. Deshmukh, S.R. (2009). Actuarial Statistics, Universities Press India.

**BLUE PRINT FOR QUESTION PAPER SETTERS**

**III B.SC PAPER V**

**LIFE CONTINGENCIES-I**

**SEMESTER-V**

 MAXMUM MARKS : 70 TIME: 3 Hrs

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **CHAPTER NAME** | **ESSAY QUESTIONS****10 MARKS** | **SHORT QUESTIONS****05 MARKS** | **VERY SHORT QUESTIONS****01 MARKS** | **MARKS ALLOTTED****TO CHAPTER** |
| **I.Introduction to life insurance** |  | **01** | **02** | **07** |
| **II.Survival Distributions and Life Tables** | **02** | **03** | **01** | **36** |
| **III. Life Insurance** | **03** | **02** | **01** | **41** |
| **IV. life Annuities** | **03** | **02** | **01** | **41** |
| **TOTAL MARKS INCLUDING CHOICE** | **08** | **08** | **05** | **125** |

**SAQ=Short answer questions (5M), EQ=Essay questions (10M)**

 **Internal Assessment for 30 Marks*:***

 Short Answer Questions : 10 x 1 = 10M

 Essay Type Questions : 4 x 5 = 20M

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 Total : 30M

**P.R.GOVT COLLEGE (AUTONOMOUS), KAKINADA**

**III.B.SC (ACTUARIAL SCIENCE)**

**PAPER – V (MODEL PAPER)**

**COURSE: LIFE CONTINGENCIES-I**

**SEMESTER-V**

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**SECTION-A**

**Answer ALL questions 5X1=5M**

1. Define life insurance.
2. Write 3 types of insurance products.
3. Prove the result 1-sqx+t =(1-s)qx /(1-tq**)** under the assumption of uniform distribution.
4. Define policy term.
5. Define annuity.

**SECTION-B**

**Answer any FIVE from the following 5X5=25M**

 6. Explain principles of life insurance.

 7.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| X | 1000q | 1000 | 1000 |  |  |  | X+2 |
| 30 | 0.222 | 0.330 | 0.422 | 9906.738 | 9904.538 | 9901.2702 | 32 |
| 31 | 0.234 | 0.352 | 0.459 | 9902.894 | 9900.57 | 9897.091 | 33 |
| 32 | 0.250 | 0.377 | 0.500 | 9898.754 | 9896.280 | 9892.549 | 34 |
| 33 | 0.269 | 0.407 | 0.545 | 9894.290 | 9891.628 | 9887.602 | 35 |
| 34 | 0.291 | 0.441 | 0.596 | 9889.451 | 9886.574 | 9882.214 | 36 |

Evaluate a) B) c) d)

 8. Write a brief note on force of mortality.

 9. Write short notes on insurance payable at the end of the death

10. Consider a 5-years differed whole life insurance payable the moment of the death of (X) the individual is subject to the constant force of mortality µ=0.04 for the distribution of the present value of the benefits payment , at δ=0.10

 a) Calculate the expectation

 b) Calculate the variance

11. Assuming that probabilities come from an aggregate table , obtain formula for

 a) b)

12. Compare the variance of the present value random variables for the compute annuity –immediate and apportionable annuity due .

13. Write a brief note on continuous life annuities.

**SECTION – C**

**Answer any TWO from the following 2X10=20M**

14. Write a brief note on assumptions for fractional ages

15. An aviary of birds which has a constant intake of 1500 new born birds per year experiences the following mortality rates

Age(X) : 0 1 2 3 4 5

 : 0.3 0.1 0.2 0.4 0.7 1.0

1. What is the expected total no. of birds in the aviary at any time
2. What is the expected no. living between ages 1 and 4
3. If the owner wanted the population to be steady at 5000, on an average how many extra new born birds would he have to add each year.

16. Assume that each of the 100 independent lives.

i) is age x

 ii) is subject to a constant force of mortality, µ=0.04

 iii) is insure for a death benefit amount of 10 units payable at the moment of death.

 The benefit payment are to be withdrawn from an investment fund earning δ=0.06. calculate the minimum amount at t=0 show that probability is approximately 0.9 that sufficient funds will be on hand to withdrawn the benefit payment at the death of each individual.

17. Write a short notes on endowment differed and varying benefit insurance.

**SECTION-D**

**Answer any TWO from the following 2X10=20M**

**18.** let µ(x)=1/1+x,for all x>0

(a)integrated by parts to show that =1-δ (1+x)/(1+x+t)dt

(b) use the expression in (a) show that d/dx <0 for all x>0

19. Find the formulas for the expectation and variance of the present value of random variable for n year terrn life annuity due.

20. Write a notes on life annuities with a m-thly payments.

21. Under the assumptions of a constant force of mortality µ,and of a constant force of interest,δ, evaluate

(a) =E[Ί]

(b)var()

(c)the probability that will exceed

**P.R.GOVT. COLLEGE (AUTONOMOUS), KAKINADA.**

**III B.SC ACTUARIAL SCIENCE/FIFTH SEMESTER 2018-19**

**III B.SC (MSAS)PAPER VI**

**COURSE: BUSINESS COMMUNICATION**

**SEMESTER-V**

**Total Hrs. Of Teaching-Learning:45 @ 3 H/Week Total credits 3**

OBJECTIVES :

* To understand the nature and scope of communication
* To provide the knowledge of Business communication
* To understand the non-verbal –verbal communication
* To know the student to effective communication.

Learning Autcomes:

* by the end of this course students can know the difference of verbal and no-verbal communication
* By the end of this course tips for effective use of communication.
* By the end of this course students can known the formal and informal communication.
* By the end of this course students have the knowledge of Barriers to effective communication.

MODULE - I: NATURE AND OF COMMUNICATION

Nature and scope of communication – Introduction- Functions of Communication-Role of a Manager-Communication-Role of a Manager Communication Basics- Communication Networks-Miscommunication-Barriers to Effective Communication.

Assignment: Role of Manager-Function of communication

MODULE – II: TIPS FOR EFFECTIVE INTERNAL COMMUNICATION

 Tips for effective internal communication – Internal Communication (Beyond the organizational Hierarchy) - Effective in managerial communication --Strategies for improving organizational communication

MODULE-III : NON- VERBAL COMMUNICATION

INTRODUCTION –Forms of non-verbal communication-interpreting non – verbal massages – Tips for effective use of non –verbal communication-verbal communication.

Assignment : Non-verbal communication –interpreting non-verbal massages

MODULE – IV : ORAL PRESENTATION

Cross cultural communication-elements of cultural – principals of effective business writing – purpose of writing-writing style-role of communication-business correspondence principals of effective business writing.

Suggested books : 1. AnjaneesathReferil – Business communication

 2. Sankirtan Bodhi – Business communication

 3. BharmaAdhikar – Business communication

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**III B.SC (MSAS)PAPER VI**

**COURSE: BUSINESS COMMUNICATION**

**SEMESTER-V**

 MAXMUM MARKS : 70 TIME: 3 Hrs

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| --- | --- | --- | --- | --- |
| **CHAPTER NAME** | **ESSAY QUESTIONS****10 MARKS** | **SHORT QUESTIONS****05 MARKS** | **VERY SHORT QUESTIONS****01 MARKS** | **MARKS ALLOTTED****TO CHAPTER** |
| **I Nature and Of Communication** | **02** | **02** | **01** | **31** |
| **II Tips for Effective Internal Communication**  | **02** | **02** | **02** | **32** |
| **III.Non Verbal Communication** | **02** | **02** | **01** | **31** |
| **IVOral Presentation** | **02** | **02** | **01** | **31** |
| **TOTAL MARKS INCLUDING CHOICE** | **08** | **08** | **05** | **125** |

**SAQ=Short answer questions (5M), EQ=Essay questions (10M)**

 **Internal Assessment for 30 Marks*:***

 Short Answer Questions : 10 x 1 = 10M

 Essay Type Questions : 4 x 5 = 20M

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 Total : 30M

**P.R.GOVERNMENT COLLEGE(AUTONOMOUS), KAKINADA**

**III YEAR B.Sc. PAPER-VI (MODEL PAPER)**

**BUSINESS COMMUNICATION**

**SEMESTER-V**

**DATE: Max. Marks: 70**

**TIME:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**SECTION-A**

Answer ALL questions from the following 5X1=5M

1. Verbal communication can involve \_\_\_\_\_\_\_\_\_\_\_\_\_\_ types.
2. Kinesis means.
3. Up word communication means.
4. Sender sends the message through a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ channel.
5. Posture means.

**SECTION-B**

**Answer any FIVE questions from the following**  **5X5=25M**

1. Miss communication
2. Barrie’s to effective communication.
3. Internal communication.
4. Tips for effective internal communication
5. Verbal communication
6. Forms of non verbal communication.
7. Cross cultural communication.
8. Purpose of writing style.

**SECTION-C**

**Answer any TWO questions from the following 2x10=20M**

1. Functions of communication.?
2. Role of Manager Communication.?
3. Strategies for improving organizational communication.?
4. Explain the effectiveness in managerial communication.?

**SECTION-D**

**Answer any TWO questions from the following 2x10=20M**

1. Interpreting non-verbal messages.?
2. Tips for effective use of Non-verbal Communication.?
3. Explain the cultural Elements.?
4. Principals of Effective Business Writing.?

**III B.Sc. – Actuarial Science**

**Fifth Semester**

**Practical Paper - V: Basic Life Contingencies-I**

(Total Hours of Laboratory Exercises: 30 @ 3 h / Week in 15 Sessions)

1. Construction of life tables and problems based on life tables.
2. Construction of life tables using analytical laws of mortality and mortality patterns.
3. True values and estimation of Net single premiums for different insurance policies.
4. True values and estimation of life annuities.
5. Calculation of yearly and mthly premium values of life insurance.