Fellowship
EXAMINATION QUESTION PAPERS
NOV 2009

भारतीय बीमा संस्थान
INSURANCE INSTITUTE OF INDIA
Universal Insurance Building,
Sir P. M. Road, Fort,
Mumbai - 400 001.
FELLOWSHIP EXAMINATION
MATHEMATICAL BASIS OF LIFE ASSURANCE

Time: 3 Hours] [Total Marks: 100

Answer any FIVE questions only.
All questions carry 20 marks each.

1. a) From the bag containing 8 red balls, 5 black balls and 3 white balls, a ball is drawn, its colour noted and replaced. Then a ball is again drawn. Find the following probabilities:
   i) the ball drawn is red in both the draws
   ii) at least one red ball is drawn in the two draws.
   iii) one of the ball drawn is red and the other is white.
   iv) a white ball is not drawn.

   Marks
   2 each

b) Fill up the blanks in the following portion of a life table.

<table>
<thead>
<tr>
<th>Age x</th>
<th>lx</th>
<th>dx</th>
<th>qx</th>
<th>Px</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>1000000</td>
<td></td>
<td>.00409</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td></td>
<td></td>
<td>.00370</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td></td>
<td></td>
<td>.00347</td>
<td>.99653</td>
</tr>
<tr>
<td>13</td>
<td></td>
<td></td>
<td></td>
<td>.99658</td>
</tr>
<tr>
<td>14</td>
<td>3370</td>
<td></td>
<td></td>
<td>.99658</td>
</tr>
</tbody>
</table>

2. a) Find the rate of interest if: \( a_x = 12.36 \) and \( A_x = 0.738 \)

b) Calculate using the given commutation functions at 4% pa the values of:

i) \( A_{30\,\,10}^{1}\) ii) \( a_{40\,\,3}^{(2)}\) iii) \( s_i A_{35}^{5}\)

Given that:

\( M_{30} = 490.33 \) \( N_{40} = 41070.31 \) \( D_{30} = 3060.13 \)
\( M_{40} = 473.33 \) \( N_{45} = 31583.93 \) \( D_{40} = 2052.96 \)
\( M_{55} = 430.55 \) \( N_{47} = 28294.89 \) \( D_{45} = 1677.97 \)
\( M_{60} = 402.93 \) \( D_{50} = 1366.61 \) \( D_{55} = 1105.41 \)

c) Show that \( \sum_{t=1}^{\infty} t |q_x|^t a_t = a_x \)
3. a) The following particulars from the revenue account of a life insurer are available.

<table>
<thead>
<tr>
<th>Description</th>
<th>Rs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fund at the beginning of the year</td>
<td>2,85,00,000</td>
</tr>
<tr>
<td>Premium income during the year</td>
<td>7,40,000</td>
</tr>
<tr>
<td>Other receipts</td>
<td>50,000</td>
</tr>
<tr>
<td>Claims</td>
<td>4,45,000</td>
</tr>
<tr>
<td>Surrender and other payments</td>
<td>30,000</td>
</tr>
<tr>
<td>Expenses of Management</td>
<td>90,000</td>
</tr>
<tr>
<td>Net interest received</td>
<td>12,60,000</td>
</tr>
<tr>
<td>Tax paid</td>
<td>2,70,000</td>
</tr>
</tbody>
</table>

Find the gross and net rates of interest earned in the year.

b) A loan of Rs. 3,000 is to be paid with interest at 6% p.a. by means of an immediate annuity for 10 years. Find the level payment. What will be the interest and principal contained in the 5th instalment? What will be the principal outstanding immediately after the 8th payment is made?

\[
V^6 @ 6\% = 0.70496 \quad a_{\overline{10}|} @ 6\% = 1.8334 \quad a_{\overline{10}|} @ 6\% = 7.3601
\]

c) Find the rate of discount corresponding to a rate of interest of 8%. What will be the present value of Rs. 10,000 due 4 years at the calculated interest?

4. a) Show that using usual notations

\[
\left[ uA_x \right]^2 = v \times \left[ \overline{A_x} - \overline{A_{x-1}} \right]^2
\]

b) Prove that under a regular premium whole life policy effected 't' years ago for a life then aged 'x', the retrospective policy value is equal to the prospective policy value if both are calculated on the premium basis. You may ignore expenses.

c) If 1 \( x = 1000 \sqrt{100-x} \), Find :

i) the probability of a life surviving from birth to age 19
ii) the probability of a life aged 36 dying before age 51.

5. a) What is expectation of life (e^x). Explain its relationship with complete expectation of life e^x

b) What is reserve for elimination of Negative values

c) What is surplus? What are its main sources?
6. a) A yearly annuity to a life aged 40 commences at Rs. 20,000 and decreases each year by Rs. 800 till Rs. 4,000 at which it remains level until it ceases at age of 80. Find the present value of annuity at 4% interest, if the first payment starts immediately.

Given: \( N_{40} = 41070.31 \quad S_{41} = 602038.53 \quad D_{40} = 2052.96 \)

\( N_{80} = 1557.89 \quad S_{61} = 119995.80 \)

b) A 10 year term assurance provides a benefit of Rs. 1 lakh at the end of year of death, together with the return (without interest) of the premiums paid. Allowing for expenses of 10% of the premium. Find the annual premium for a life aged 50 at 4% interest.

Given: \( M_{50} = 449.71 \quad R_{59} = 11697.22 \quad N_{50} = 23839.41 \)

\( M_{60} = 402.93 \quad R_{60} = 7382.67 \quad N_{60} = 12477.80 \)

a) Corresponding to the rate of interest of 21% per half year, find the nominal rate of interest p.a. convertible quarterly.

b) 'X' has taken loan of Rs. 5,000 from 'Y' at rate of interest 10% p.a. convertible half yearly. 'X' pays Rs. 1,000 at the end of first year and pays Rs. 2,000 at the end of second year. 'X' pays the final amount at the end of 5 years. What is the final amount paid by 'X'? 

Given at 10%: \( v^2 = .82645 \quad v^4 = .68301 \quad v^5 = .62092 \)

\( v^6 = .46651 \quad v^{10} = .38554 \)

Given at 5%: \( v^2 = .90703 \quad v^4 = .82270 \quad v^5 = .78353 \)

\( v^6 = .67684 \quad v^{10} = .61391 \)

c) i) Find the effective rate of interest p.a. corresponding to nominal rate of 6% p.a. convertible quarterly.

ii) The compound interest on Rs. 7,000 at the end of 3 years is Rs. 1337. The amount at the end of 4 years is Rs. 8,837.50 Find rate of interest. Also find the amount at the end of 7 years.
8. A special Endowment policy for a life aged 40, for 20 year payable by way of half yearly premiums has the following benefits.
- Rs. 75,000 payable on death (at the end of year of death during the term of the policy.)
- Rs. 1,00,000 payable on survivance of the term
- Premiums paid along with interest of 4% p.a. effective compounding as the same frequency of premium payment on survivance of 10 years.

Calculate the half yearly premium on the following basis
Interest - 4%
Expenses - Initial Rs. 1,500
- Renewal Rs. 250 p.a.

You may assume that expenses are incurred, when premiums are received.

**Given:**

\[
\begin{align*}
M_{40} &= 473.33 & D_{40} &= 2052.96 \\
M_{60} &= 402.93 & D_{50} &= 1366.61 \\
N_{40} &= 41070.31 & D_{60} &= 882.85 \\
N_{60} &= 12477.80
\end{align*}
\]
FELLOWSHIP EXAMINATION

STATISTICS

Time: 3 Hours] [Total Marks : 100

Answer any FIVE questions only.
All questions carry 20 marks each.

(An extract from the table of areas of the standard normal curve
between 0 and x is given at the end)

1. a) i) In a certain harbor there are 2 battleships, 3 cruisers, 5 destroyers
and a submarine. Six of the commanding officers are invited to attend
a cocktail party ashore. If all those invited and no others, attend,
what is the probability that the guests represent 1 battleship, 2 cruisers,
2 destroyers and the submarine?
Assume that the eleven commanding officers are all equally likely to
be invited.
ii) What is the probability that all 5 destroyer commanding officers attend
the party?

b) 4 bags each contain 4 white and 7 black balls while one other bag contains
7 white and 4 black balls. A bag is chosen at random from the 5 bags and
2 balls are drawn out of it together and both are found to be black. What
is the probability that it came from a bag containing 7 white and 4 black
balls?

2. a) 10 students are selected from a class at random and given two tests, one
in the ‘Mathematics’ and one in ‘Statistics’. Marks obtained by the students
in two tests are given below:

<table>
<thead>
<tr>
<th>% Marks in Mathematics</th>
<th>85</th>
<th>77</th>
<th>41</th>
<th>71</th>
<th>56</th>
<th>76</th>
<th>48</th>
<th>91</th>
<th>53</th>
<th>62</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Marks in Statistics</td>
<td>80</td>
<td>66</td>
<td>41</td>
<td>51</td>
<td>57</td>
<td>69</td>
<td>46</td>
<td>86</td>
<td>51</td>
<td>53</td>
</tr>
</tbody>
</table>

Find the co-efficient of correlation between the % marks obtained in the
two subjects.

b) Find the mean $\bar{x}$ & $\bar{y}$ of the two variables $x$ & $y$. Given that:
a) The line of regression of $y$ on $x$ passes through the points (4,0) &
(-14,3)
b) The line of regression of $x$ on $y$ passes through the points (1,-1)
c) Co-efficient of correlation between $x$ & $y$ is $-\frac{1}{2}$
3. a) A random variable $X$ follows Poisson Distribution with mean 3. Find probabilities
   i) $P(X = 0)$
   ii) $P(X = 1)$
   iii) $P(X \geq 2)$

   Given $e^{-3} = 0.04979$

b) An urn contains 6 white and 4 black bangles. One bangle is taken out, its color is noted and put back. Then another bangle is taken out. This process is repeated 4 times. Find the probability that exactly 2 bangles are white and 2 are black.

4. Three different methods M1, M2, M3 are used to determine amount of certain component in a sample. Each method is used by 5 analysts and the results are tabulated below. Discuss the significance of variation in results as regards methods and analysts.

   Given: $F_{0.05} = 4.46$ for degrees of freedom 2 and 8
   $= 3.84$ for degrees of freedom 4 and 8

<table>
<thead>
<tr>
<th>Methods → Analyst</th>
<th>M1</th>
<th>M2</th>
<th>M3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>7.5</td>
<td>7.0</td>
<td>7.1</td>
</tr>
<tr>
<td>2</td>
<td>7.4</td>
<td>7.2</td>
<td>6.7</td>
</tr>
<tr>
<td>3</td>
<td>7.3</td>
<td>7.0</td>
<td>6.9</td>
</tr>
<tr>
<td>4</td>
<td>7.6</td>
<td>7.2</td>
<td>6.8</td>
</tr>
<tr>
<td>5</td>
<td>7.4</td>
<td>7.1</td>
<td>6.9</td>
</tr>
</tbody>
</table>

5. What is stratified random sampling? When will you use it as a preference over simple random sampling? What are the methods used for deciding optimum size of the sample for each stratum?

6. a) Work out the centered 4 yearly moving average for the following data.

<table>
<thead>
<tr>
<th>Year</th>
<th>Tonnage of Goods Carried</th>
<th>Year</th>
<th>Tonnage of Goods Carried</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>2204</td>
<td>1996</td>
<td>2904</td>
</tr>
<tr>
<td>1991</td>
<td>2500</td>
<td>1997</td>
<td>3098</td>
</tr>
<tr>
<td>1992</td>
<td>2360</td>
<td>1998</td>
<td>3172</td>
</tr>
<tr>
<td>1993</td>
<td>2680</td>
<td>1999</td>
<td>2952</td>
</tr>
<tr>
<td>1994</td>
<td>2424</td>
<td>2000</td>
<td>3248</td>
</tr>
<tr>
<td>1995</td>
<td>2634</td>
<td>2001</td>
<td>3172</td>
</tr>
</tbody>
</table>
b) What are the four components of a time series data? Give a brief description of each. What kind of relationship is assumed between them in the classical analysis?

7. a) 11 students are selected from a class at random and given two tests, one in algebra and one in geometry. The marks obtained in the two tests are given below:

<table>
<thead>
<tr>
<th></th>
<th>Algebra</th>
<th>Geometry</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>23</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>20</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td>19</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>21</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>18</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>18</td>
<td>23</td>
</tr>
<tr>
<td></td>
<td>17</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>23</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>16</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>19</td>
<td></td>
</tr>
</tbody>
</table>

Test whether there is significant difference between the performances in Algebra and Geometry. Given that $t_{0.025}$ for 10 degrees of freedom is 2.228.

b) The number of Policies lapsing after payment of first premium in respect of two Branches of Life Office is given below for the financial year 2008-09:

<table>
<thead>
<tr>
<th>Branch</th>
<th>No. of policies Issued</th>
<th>No. of Lapses</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>12,000</td>
<td>564</td>
</tr>
<tr>
<td>B</td>
<td>7,000</td>
<td>385</td>
</tr>
</tbody>
</table>

Test at 5% level, whether there is significant difference between the proportion of policies lapsing after payment of first premium.

8. Problems faced while constructing Index Numbers are generally classified in six groups. State and explain in brief all these groups of problems.
<table>
<thead>
<tr>
<th>X</th>
<th>Area</th>
<th>X</th>
<th>Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.05</td>
<td>0.0199</td>
<td>1.1</td>
<td>0.3643</td>
</tr>
<tr>
<td>0.1</td>
<td>0.0398</td>
<td>1.2</td>
<td>0.3849</td>
</tr>
<tr>
<td>0.2</td>
<td>0.0793</td>
<td>1.3</td>
<td>0.4032</td>
</tr>
<tr>
<td>0.3</td>
<td>0.1179</td>
<td>1.4</td>
<td>0.4192</td>
</tr>
<tr>
<td>0.4</td>
<td>0.1554</td>
<td>1.5</td>
<td>0.4332</td>
</tr>
<tr>
<td>0.5</td>
<td>0.1915</td>
<td>1.6</td>
<td>0.4452</td>
</tr>
<tr>
<td>0.6</td>
<td>0.2257</td>
<td>1.65</td>
<td>0.4500</td>
</tr>
<tr>
<td>0.7</td>
<td>0.2580</td>
<td>1.7</td>
<td>0.4554</td>
</tr>
<tr>
<td>0.8</td>
<td>0.2881</td>
<td>1.8</td>
<td>0.4641</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.9</td>
<td>0.4713</td>
</tr>
<tr>
<td>0.9</td>
<td>0.3159</td>
<td>1.96</td>
<td>0.4750</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2.00</td>
<td>0.4772</td>
</tr>
<tr>
<td>1.0</td>
<td>0.3413</td>
<td>2.58</td>
<td>0.4951</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3.0</td>
<td>0.4987</td>
</tr>
</tbody>
</table>
TIME: 3 Hours

Answer any FIVE questions only.

All questions carry 20 marks each.

Marks

1. While drafting Trust Deed and Rules of a Gratuity Scheme, certain vital provisions are to be included in these documents, so that the scheme will qualify for approval under the Income Tax Act, 1961 and Income Tax rules, 1962. Enumerate these vital provisions. 20

2. What are the conditions to be fulfilled by an establishment for obtaining exemption from the provisions of the Employees’ Provident Funds and Miscellaneous Provisions Act, 1952? 20

3. a) Explain briefly why actuarial valuations of Defined Benefits Schemes are necessary? Whether the benefits are funded or not? 6

   b) Paras Establishment Ltd. is a Joint Stock Company in private sector in business for the past 15 years, employing 4,500 employees. It has still not funded its Gratuity Liability. Now it has started making good profits, it proposes to set-up a Gratuity Trust. You, as Retirement Benefits Manager, are approached for advice in the matter. Discuss the alternatives available for funding the liability and recommend one course for implementation, highlighting its superiority over the other. 14

4. Mayank Ltd. is a private company, interested in introducing Group Savings Linked Insurance for its 115 employees. As a Manager of Pension & Group Schemes, how will you advise them on the following topics:- 20

   a) Object of the Scheme
   b) Contributions
   c) Participation Conditions
   d) How contributions are dealt with
   e) Benefits both on retirement and on premature death.
   f) Tax benefits
   g) Data required.
5. State the Income Tax Position from the point of view of both an employee and employer (wherever applicable) in regard to the following, including the relevant sections of the Income Tax Act, 1961:–
   a) Annual Contribution made by an employee and employer under a Contributory Group Superannuation Scheme.
   b) Death benefit received under GSLI Scheme consisting of risk cover sum assured and savings portion with accumulated interest.
   c) Commuted Value payable under Group Superannuation Scheme at the time of death
   d) Employer’s contribution towards first yearly installment of single premium towards Past Service Gratuity Liability.

6. Write short notes on:–
   i) Winding up of Superannuation Scheme
   ii) Commutation of Pension
   iii) Unit linked Insurance Scheme
   iv) Transfer of Equitable Interest

7. a) What are the different ways of Funding Gratuity Liability?
   b) Company ABZ metals Pvt. Ltd. was established on 1-10-1999. The Company has staff strength of 100 at present. So far the company was paying gratuity by ‘Pay as you go method.’ The Company is now interested to introduce Group Gratuity Cum Life assurance scheme with an Insurance Company. The Company desires to spreading past service liability in 7 instalments in future, and to pay 10% of wage Bill as Annual Contribution. Further Company wants to pay Rs. 50,000/- more than the ceiling as per the payment of Gratuity Act to the officers.
      As a consultant you have to guide in
      a) Various statutory required to be complied with.
      b) Document to be submitted to Insurance Company.
      c) Limitation and Tax Liability as per the Income Tax Act.

8. Examine the viability of the following groups for setting up a Group Insurance Scheme. If the proposals are acceptable, state briefly the terms and conditions.
   a) A proposal to cover 3700 handloom workers for uniform cover of Rs. 1,00,000 with double accident and disability benefit. The handloom workers are members of a Primary Co-operative society.
b) A proposal to cover 4000 members of a Co-operative Credit Society for a uniform sum assured of Rs. 50,000. The members of the society are the employees of a joint stock company in private sector.
1. Calculate profit commission payable on
   a) Annual basis
   b) Three years average basis, from following Treaty results for the year 2008-
      
      | Item                                      | Rs.    |
      |-------------------------------------------|--------|
      | Premium                                   | 50,00,000 |
      | Premium Reserve brought forward           | 15,00,000 |
      | Outstanding Reserve brought forward       | 7,00,000  |
      | Commission                                | 30%    |
      | Claims paid                               | 20,00,000 |
      | Foreign Tax                               | 10,000  |
      | Premium Reserve carried forward           | 15,20,000 |
      | Outstanding loss carried forward          | 7,50,000  |
      | Management Expense                        | 1,15,000  |
      | Profit Commission                         | 20%    |
      | Deficit for 2007                          | 80,000  |
      | Deficit for 2006                          | 25,000  |

2. What are the factors involved in determining the underwriting philosophy while accepting inward reinsurance business.  

3. Briefly differentiate any four of the following:
   a) Gross Line and Net Line.
   b) Written Premium and Earned Premium.
   c) Ground-up Loss and Ultimate Net Loss.
   d) Set-off clause and offset.
   e) Reciprocal and Non-Reciprocal Treaties.
4. ABC General Insurance Company is about to be set up in India. Please clarify:
   a) The specific IRDA regulation applicable regarding Reinsurance. 1
   b) Minimum rating stipulated by IRDA for a reinsurance company with which business can be placed. 1
   c) Limit of statutory cessions (%) to GIC during 2009-2010. 2
   d) What are the criteria for security evaluation adopted by credit agencies? 16

5. Outline the functions of Intermediaries in global Reinsurance Market. 20

6. What are the factors influencing the retention levels of an insurance company? 20

7. Outline the need for and functions of Reinsurance. 20

8. a) Elaborate the proportional methods of reinsurance with examples. 10 each
   b) How is the use of information technology simplifying reinsurance administrative procedures?

--- END ---
<table>
<thead>
<tr>
<th>No.</th>
<th>Question</th>
<th>Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Examine the reasons why an Organization may decide to form a Captive Insurance Company.</td>
<td>20</td>
</tr>
<tr>
<td>2.</td>
<td>Describe the corporate risk management process in a logical sequence.</td>
<td>20</td>
</tr>
<tr>
<td>3.</td>
<td>Explain the relationship between Risk Management and other functional management.</td>
<td>20</td>
</tr>
<tr>
<td>4.</td>
<td>a) Explain the ways of financial evaluation of Risk reduction measures.</td>
<td>10 each</td>
</tr>
<tr>
<td></td>
<td>b) What are the sources of information for evaluating loss reduction programs?</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>What is Safety audit and what are the stages in it?</td>
<td>20</td>
</tr>
<tr>
<td>6.</td>
<td>“One form of risk transfer is the transfer of the activity that creates the risk.” Give examples of this transfer and discuss the legal and cost aspects involved.</td>
<td>20</td>
</tr>
<tr>
<td>7.</td>
<td>a) How does Risk Management contribute to achievement of Corporate Objectives.</td>
<td>10 each</td>
</tr>
<tr>
<td></td>
<td>b) What is mutual aid and what factors inhibit formation of the same?</td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>Explain how probability distributions help risk manager to handle losses and related issues.</td>
<td>20</td>
</tr>
</tbody>
</table>
FELLOWSHIP EXAMINATION

LAW AND ECONOMICS OF INSURANCE

Time: 3 Hours] [Total Marks: 100

Attempt at least 2 questions each from Section 'A' and Section 'B'.

Total Questions to be attempted are 5 only.

All questions carry 20 marks each.

Section - 'A'

1. a) State the essential Features of Insurance Contract. 10
   b) Explain the contractual capacity of:
      i) Married women. 10
      ii) Corporation

2. a) A contract of insurance is not a wagering contract. What is a Wagering Contract? How does it differ from an Insurance Contract? 12
   b) What are the provisions relating to investments of funds of Life Insurance Corporation of India? 8

3. a) Section 38 of Insurance Act is a complete code for assignment of a life insurance policy. Discuss the two types of Assignments. What are the rights of an assignee? 12
   b) What does Section 45 of Insurance Act 1938 indicate? 8

4. a) Explain in detail as to how an agency can be created. 12
   b) What are the disqualifications prescribed under Sec. 42(4) of Insurance Act for being licensed as an Agent? 8

Section 'B'

5. a) Explain in detail the determinants of elasticity of demand. 12
   b) Distinguish between Static Economics and Dynamic Economics. 8

6. a) Differentiate Monopoly and Perfect Competition. 10
   b) State the determinants of supply. 10
7. 'Profits can be maximised by bringing down the cost of production.' Do you agree with this statement? What are the various costs of production?

8. Write short notes on the following:—
   a) Frustration of contract
   b) Study of Economics
   c) Oligopoly
   d) 'Insurance has to be sold rather than bought.'
FELLOWSHIP EXAMINATION
MARKETING AND PUBLIC RELATIONS

Time: 3 Hours] [Total Marks: 100

Answer any FIVE questions only.
All questions carry 20 marks each.

(Note: Answer to questions pertaining to the Insurance Industry may be given with reference to either Life or General Insurance Industry)

1. Organisations in the same business may be having different target segments. Illustrate this with reference to:
   i) Hospitals
   ii) Cinema theatres
   iii) Couriers
   iv) Book stores

   Marks
   5 each

2. Write short notes (about 50 words) on the following:
   a) Niche marketing strategy
   b) Recovery in relation to complaints
   c) Benchmarking
   d) Reach and Richness

   Marks
   5 each

3. Identify any four products (other than the ones mentioned in the book) that were popular some years back in your experience, but are not in the market now. Suggest the reasons that may have contributed to their decline.

   Marks
   20

4. An entrepreneur finds that there may be a need among people for help to do odd jobs like paying bills (electricity, telephone, taxes), booking tickets (travel, entertainment) small purchases (vegetables, fruits), bank work, etc. and wants to start a business offering these and similar services.

   a) Identify the characteristics of the relevant market segment for this business.
   b) What are the elements in the Marketing Mix that he will have to pay attention to?
   c) What advice will you give him with regard to these elements in the Marketing Mix?
5. What is the justification for the following practices?
   a) Branch Managers call on big clients and important persons in the locality.
   b) Several organisations have created separate cells for handling grievances.
   c) Some employees seek negative stokes.
   d) In the case of outstanding claims, claimants are contacted to find out whether they need help to submit the necessary requirements.

6. a) During the recent swine-flu epidemic, various authorities had set up several arrangements to meet the situation.
   i) List out the arrangements that you are aware of.
   ii) Discuss (in terms of factors like recognition that make people satisfied) how effectively these arrangements could meet the anxieties and needs of the public.
   b) Describe the different stages in the buying process of a customer.
   c) Why is it said that in reality, these stages and the factors involved are not amenable to rational analysis? Illustrate with reference to purchase of an insurance policy.

7. a) What is meant by saying that ‘Marketing and Consumerism complement each other’?
   b) What do you understand by the term ‘Social Impact’?

8. Out of the 7 Ps (Product, Price, Promotion, Place, People, Process and Physical factors), state which one (choose only one) is relevant for the following. Give reasons to justify the answer.
   a) Announcing help line telephone numbers soon after a major accident.
   b) Banks opening additional counters to meet rush for tax payments on 31st March.
   c) Railways operating additional trains to meet holiday rush.
   d) A shopping mall announces a reduction of 10% during a long week end.
   e) A magazine offers chance to get bumper prizes for new subscribers.
   f) Car dealer provides free service guarantee for three years for new cars.
   g) Car dealer provides free insurance cover for new cars.
   h) A courier gives intensive training in behaviour for its delivery personnel.
   i) A courier ensures that all delivery personnel are smartly dressed.
   j) Pharma company sends to selected doctors, bulletins on latest research findings.

----- END -----
Question ONE is compulsory. Total questions to be attempted are FIVE. All questions carry 20 equal marks.

1. From the following balances extracted from the books of Happy Life Insurance Corporation Ltd. as on 31st Mar. 2007, and with the additional information given below, prepare the company's Balance Sheet as on that date and the Revenue Account for the year ended on that date.

<table>
<thead>
<tr>
<th>(Rs. in Lakhs)</th>
<th>Debit</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Share capital</td>
<td>10,000</td>
<td></td>
</tr>
<tr>
<td>Life Fund (1.4.2006)</td>
<td></td>
<td>6,000</td>
</tr>
<tr>
<td>Claims Paid less Reinsurance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Death</td>
<td>2,790</td>
<td></td>
</tr>
<tr>
<td>Maturity</td>
<td>2,220</td>
<td></td>
</tr>
<tr>
<td>Surrenders</td>
<td>300</td>
<td></td>
</tr>
<tr>
<td>Annuities</td>
<td>1,200</td>
<td></td>
</tr>
<tr>
<td>Building at Cost</td>
<td>1,000</td>
<td></td>
</tr>
<tr>
<td>Furniture and Fixtures</td>
<td>130</td>
<td></td>
</tr>
<tr>
<td>Cash at Bank</td>
<td>3,670</td>
<td></td>
</tr>
<tr>
<td>Cash on Hand</td>
<td>280</td>
<td></td>
</tr>
<tr>
<td>Premium (Net)</td>
<td></td>
<td>7,250</td>
</tr>
<tr>
<td>Consideration for Annuities</td>
<td></td>
<td>1,400</td>
</tr>
<tr>
<td>Premium Deposits</td>
<td></td>
<td>700</td>
</tr>
<tr>
<td>Management Expenses</td>
<td>1,000</td>
<td></td>
</tr>
<tr>
<td>Commission</td>
<td>1,200</td>
<td></td>
</tr>
<tr>
<td>Agent's Balances</td>
<td>560</td>
<td></td>
</tr>
<tr>
<td>Investments (at Cost)</td>
<td>12,000</td>
<td></td>
</tr>
<tr>
<td>Interest, rent and dividends</td>
<td></td>
<td>1000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>26,350</strong></td>
<td><strong>26,350</strong></td>
</tr>
</tbody>
</table>
Additional information:-(Rs. in Lakhs)

i) Claims outstanding
   a) Death 310
   b) Maturity 50

ii) Provide for depreciation at 5% on building and at 10% on Furniture and Fixtures.

iii) Market Value of investments 15,000

iv) Premium deposits include 100 which is actually premium on policies already incepted.

v) Provide for income tax 1,000

OR

1. The following is the Trial Balance of Prime General Insurance Company Ltd. you are require to prepare related Revenue Accounts, Profit & Loss Account, Profit and Loss appropriation Account for the year ending 31st March 2000 and the Balance Sheet as on that date.

<table>
<thead>
<tr>
<th>(Rs. in Lakhs)</th>
<th>Debit</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unexpired Risk Reserve A/c (1-04-1999)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fire</td>
<td>2000</td>
<td></td>
</tr>
<tr>
<td>Marine</td>
<td>700</td>
<td></td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>800</td>
<td></td>
</tr>
<tr>
<td>Claims outstanding (1-04-1999)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fire</td>
<td>300</td>
<td></td>
</tr>
<tr>
<td>Marine</td>
<td>160</td>
<td></td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>2000</td>
<td></td>
</tr>
<tr>
<td>Claims Paid less Reinsurances</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fire</td>
<td>1000</td>
<td></td>
</tr>
<tr>
<td>Marine</td>
<td>200</td>
<td></td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>1320</td>
<td></td>
</tr>
<tr>
<td>Premium less reinsurances</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fire</td>
<td>1800</td>
<td></td>
</tr>
<tr>
<td>Marine</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>1900</td>
<td></td>
</tr>
<tr>
<td>Commission Paid</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fire</td>
<td>200</td>
<td></td>
</tr>
<tr>
<td>Marine</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>150</td>
<td></td>
</tr>
</tbody>
</table>

20
<table>
<thead>
<tr>
<th></th>
<th>Debit</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management Expenses</td>
<td>700</td>
<td></td>
</tr>
<tr>
<td>Amount due to other insurers</td>
<td></td>
<td>300</td>
</tr>
<tr>
<td>Amount due from other insurers</td>
<td>270</td>
<td></td>
</tr>
<tr>
<td>Share Capital</td>
<td></td>
<td>1000</td>
</tr>
<tr>
<td>General Reserves</td>
<td></td>
<td>800</td>
</tr>
<tr>
<td>Cash at bank</td>
<td>1380</td>
<td></td>
</tr>
<tr>
<td>Cash on hand</td>
<td>280</td>
<td></td>
</tr>
<tr>
<td>Investments at cost</td>
<td>5800</td>
<td></td>
</tr>
<tr>
<td>Interest, Dividend etc.</td>
<td></td>
<td>200</td>
</tr>
<tr>
<td>Income Tax paid</td>
<td>150</td>
<td></td>
</tr>
<tr>
<td>Building</td>
<td>500</td>
<td></td>
</tr>
<tr>
<td>Furniture and Fixtures</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>12060</strong></td>
<td><strong>12060</strong></td>
</tr>
</tbody>
</table>

Additional information given are: (Rs. in Lakhs)

i) Claims outstanding on 31.03.2000:
   - Fire 200
   - Marine 120
   - Miscellaneous 1250

ii) Provide depreciation @ 5% on building and 25% on Furniture and Fixtures.

iii) Provide for unexpired risk reserve at 100% for marine and at 50% for other departments.

iv) Accrued interest 100

v) Market Value of investments 8,000

vi) Apportion the management expenses 4 : 1 : 2

vii) Proposed dividend at 20%

2. a) Explain the term "overheads". What are the various types of overheads? 10 each

   b) In a manufacturing unit, factory overhead was recovered at a predetermined rate of Rs. 30 per manday. The total overhead expenses incurred and the mandays actually worked were Rs. 60 lakh and Rs. 1.5 lakh respectively. Out of 50,000 units produced, 40,000 were sold.

   It was found that 50% of the unabsorbed overheads were due to defective planning and the rest were attributable to increase in overhead costs. How would unabsorbed overheads be treated in cost accounts?
3. a) Why auditing is needed in an organisation?  
   b) Highlight the various kinds of errors normally found out during various audits.  
   c) Differentiate between Cost Audit and Management Audit.

4. Given below are the Balance Sheets as on March 31st of two consecutive years and a Statement of income and reconciliation of earnings for the current year of Wellknown Industries Ltd. During the year, an old machine was sold for Rs. 6,00,000 in cash. Its original purchase price was Rs. 15,00,000 and accumulated depreciation was Rs. 8,00,000.

   a) Balance Sheets

<table>
<thead>
<tr>
<th>Previous Year</th>
<th>Current Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash</td>
<td>74</td>
</tr>
<tr>
<td>Sundry debtors</td>
<td>54</td>
</tr>
<tr>
<td>Inventories</td>
<td>312</td>
</tr>
<tr>
<td>Prepaid expenses</td>
<td>6</td>
</tr>
<tr>
<td>Land</td>
<td>60</td>
</tr>
<tr>
<td>Patents</td>
<td>55</td>
</tr>
<tr>
<td>Plant and Machinery</td>
<td>420</td>
</tr>
<tr>
<td>Less: Accumulated Depreciation (105)</td>
<td>(120)</td>
</tr>
</tbody>
</table>

   Total Assets :-
<table>
<thead>
<tr>
<th>Previous Year</th>
<th>Current Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>876</td>
<td>840</td>
</tr>
</tbody>
</table>

   Sundry Creditors | 86 | 102 |
   Provision for income tax | 89 | 17 |
   Debentures | 220 | 60 |
   Equity Capital | 250 | 450 |
   Retained earnings | 231 | 211 |

   Total Liabilities :-
<table>
<thead>
<tr>
<th>Previous Year</th>
<th>Current Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>876</td>
<td>840</td>
</tr>
</tbody>
</table>

   b) Statement of income for the current year:

   Net sales | 1977 |
   Less: Cost of goods sold | 1460 |
   Gross Profit | 517 |
   Less: Operating expenses including depreciation | 506 |
   Less: Interest on debentures | 14 |
   (−3) |
   Add: Earnings retained in earlier year | 231 |
   c/fd. | 228 |
Less: Dividend paid 16
Loss on sale of machine 1
Retained Earning Current year 211
Prepare a Cash Flow Statement of Well Known Industries Ltd. for the current year.

5. a) A company manufactures 4 types of colour TVs A, B, C and D. The sales mix in value comprises 20%, 30%, 35% and 15% for A, B, C and D respectively. 100% sales is Rs. 6,00,000 per month. Variable cost as a percentage of selling price A - 50% B, 55% C, 75% and D - 40% Fixed costs Rs. 2,70,000
Calculate the break even point for the firm on over-all basis.

b) Find out the break even point of the above firm:-
   i) if the fixed cost goes up by 10% while other things remain constant.
   ii) if the variable cost goes up by 10% while the fixed cost remains constant at Rs. 2,70,000 and sales at Rs. 6,00,000

6. a) Explain the term "Disposition of variances".

b) Excel Industries Pvt. Ltd. has made a forecast for the next quarter as under:
   Rs. 20,000 for 10000 hours
   Rs. 18,500 for 9000 hours
   Rs. 17,000 for 8000 hours
   The normal volume of activity is 10000 hours. At the end of the quarter, it was found that 8750 hours were utilised for a total overhead expenditure of Rs. 28,750 of which fixed overheads totalled Rs. 15,250. Standard utilisation of labour hours should have been less by 5%. Find out the overhead variance and bifurcate between the fixed overhead variance and variable overhead variance.

7. a) What are the principles governing appraisal of Capital Investments?

b) Briefly describe any three methods of Capital Appraisal?

c) Determine the average Rate of Return from the following data of two units X and Y.
<table>
<thead>
<tr>
<th>Year</th>
<th>Unit 'X' Rs.</th>
<th>Unit 'Y' Rs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>4000</td>
<td>8000</td>
</tr>
<tr>
<td>2</td>
<td>6000</td>
<td>8000</td>
</tr>
<tr>
<td>3</td>
<td>7500</td>
<td>7500</td>
</tr>
<tr>
<td>4</td>
<td>8000</td>
<td>6000</td>
</tr>
<tr>
<td>5</td>
<td>8000</td>
<td>4000</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td><strong>33500</strong></td>
<td><strong>33500</strong></td>
</tr>
</tbody>
</table>

Estimated Life
- 5 years

Estimated Salvage Value
- 5000

8. Write short notes on *(any four)*:
   - a) Prudential norms under IRDA *(Investment)* Regulations
   - b) ABC Analysis
   - c) Segment Reporting
   - d) Sources of Corporate Funds.
   - e) Double entry System.

---THE END---
FELLOWSHIP EXAMINATION
HUMAN RESOURCES MANAGEMENT

Time: 3 Hours

[Total Marks: 100

Answer any FIVE questions only.
All questions carry 20 marks each.

1. Discuss the validity of the following statements:
   a) Learning must result in a change in behaviour through reinforced practice or experience. Therefore, lectures in a training classroom, not being practice, cannot result in learning.
   b) The designation given to an employee clarifies his job.
   c) Interviews or Group discussions do not help to assess the attitudes of candidates and are therefore, not useful as instruments of selection.
   d) Promotions should be given based on ability to perform at the higher level and not performance at the present lower level.

2. Write short notes on the following:
   a) Resistance to Change
   b) Sensitivity Training
   c) Internal Communication
   d) Collective Bargaining

3. a) In the office or department in which you are working,
   i) what, if any, is the mission?
   ii) what, if any, are the objectives?
   iii) how do you come to know about the mission or objectives?
   b) What are the factors relevant to determine the span of control? Illustrate this with at least two examples.

4. a) What are the core characteristics of a job in the model?
b) In the job which you are doing now, explain the extent to which these core characteristics exist.
c) Who in your opinion, should take responsibility for an employee acquiring new knowledge (i) the employee or (ii) the organisation? Give reasons for your opinion.
5. a) Explain the concept of the Managerial Grid.
   b) Which one of the five styles referred to in the Grid, is the most effective?
      Give reasons and examples.
   c) Explain the concept of Need for Power.
   d) Can a manager with a high need for power be a good manager?

6. a) Give two examples each, from your office, of upward and downward communication.
   b) For a Managing Director to communicate to all the employees about the performance of the company for the year, what would be the right medium and language to use?
   c) What are the other media available and why are they less effective?
   d) If you are the departmental head, do you have to do anything to ensure that the communication as suggested by you in (b) above, reaches every staff member and is understood by them?

7. a) What are the different methods of Job Evaluation?
   b) What are the causes of accidents?
   c) What can be done to bring down the incidence of accidents?

8. a) It is said in the book that Motivation is often misunderstood as something that managers do or give to their employees. Does this mean that managers have nothing to do with motivation of employees? Explain.
   b) What do you understand by the expression QWL? What can managers do about QWL?

---THE END---
FELLOWSHIP EXAMINATION
LEGAL ASPECTS OF INDUSTRIAL RELATIONS

Time: 3 Hours] [Total Marks : 100

Answer any FIVE questions only.
All questions carry 20 marks each.

1. "The Declaration of Fundamental Rights would be meaningless unless these rights can be enforced at the instance of persons on whom they are conferred." Discuss this statement with reference to constitutional provisions for the enforcement of fundamental rights.

2. a) The Industrial Disputes (Amendment) Act 1982 has made certain significant changes in the principal Act. Enumerate the various changes effected by the amendments.

   b) Define Industrial Dispute. What were the decisions of Supreme Court in the cases of Banerjee v/s Mukherjee (AIR 1953 SC 58) and newspaper v/s State Industrial Tribunal (AIR 1960 SC 1328).

3. a) How does suspension differ from retrenchment?

   b) Explain in detail Sec. 11-A of the I.D. Act relating to the power to set aside discharge of dismissal orders.

4. a) Award includes Interim Award also - Discuss. Discuss in the light of Supreme Court Judgment in Hotel Imperial New Delhi Vs Hotel Workers' Union case.

   b) What is the effect of two following judgments on the questions of supersession of earlier settlement -- Madan Mohan Pathak's and D. J. Bahadur's.

5. a) How Labor Courts are constituted? What are the issues adjudicated upon by the Labor Courts?

   b) What does Section 36-A of the I.D. Act refers to?

   12

   8
6. Write short notes:-
   a) Natural Justice
   b) Condition precedent to retrenchment.
   c) Rest Interval
   d) Notional Extension Theory.

7. a) State the conditions of eligibility for payment of Gratuity.
    b) What are the circumstances under which Gratuity payable can be wholly or partially forfeited?

8. a) Define 'Wages' as stated u/s 2(vi) of payment of Wages Act.
    b) What are the deductions authorized u/s 7 of Payment of Wages Act.

      END      

FELLOWSHIP EXAMINATION
ADVANCED INFORMATION TECHNOLOGY

Time: 3 Hours] [Total Marks : 100

Answer any FIVE questions only.
All questions carry 20 marks each.
(Template is not required for drawing flow charts.)

1. Building an effective Business Intelligence environment like CRM would be ideal for an insurance company to focus on its customer centric approach. Discuss.

   Marks 20

2. a) Describe the client server architecture.
   b) How can ATM technology make network seamless and integrated?

   Marks 10 each

3. Narrate about:-
   i) A model Website of a Life Insurance Company.
   ii) Structured Query language.

   Marks 10 each

4. a) Describe the Pentium series of Microprocessors.
   b) Write a note on ‘Expert System’.

   Marks 12 8

5. a) How is file system organized in the Unix operating system?
   b) Write briefly about
      i) JAVA
      ii) Visual Basic

   Marks 10 5 each

6. Briefly explain about:
   i) Storage Media
   ii) Structured Programming

   Marks 10 each

7. Efficiency of certain business processes in an insurance organization could be enhanced through outsourcing. Elaborate.

   Marks 20

8. How can Microsoft Office automation software like Word, Excel and PowerPoint benefit an insurance organization?

   Marks 20

END
1. a) What do you understand by the term ‘Risk’?  
   b) Enumerate the various types of risk.  
   Marks 10 each

2. Explain briefly about yield curve. What are the factors that affect the shape of the yield curve? 20

3. What are repos and reverse repos transactions? Explain the role of RBI in monetary management through these transactions. 20

4. What are the important aspects of IRDA Act and IRDA Regulations on the following:-  
   a) Requirement as to Capital.  
   b) Shareholding by promoters.  
   c) Investments. 20

5. a) Explain Gordon’s dividend growth model for stock valuation.  
   b) Rainbow Industries Ltd. is expected to grow at the rate of 10% per annum. One year down the line the company is expected to declare a dividend of Rs. 4/-. What will be the price if the required rate of return is 15%?  
   Marks 10 each

6. “Futures markets play an important role in the world of finance.” Explain the mechanism of futures and its advantage. 20

7. a) What is an Asset Management Company and the role played by them in India?  
   b) Explain the agency services which an AMC can hire from outside agencies? 10 each
8. Write short notes (on any 4)
   a) LIBOR
   b) Public Debt office.
   c) Money Market instruments
   d) Diversification (Portfolio)
   e) Head and shoulders

----- END -----