FINAL EXAMINATION — SET - 1

MODEL ANSWERS — **TERM – DECEMBER 2023**

PAPER – 20B — **SYLLABUS 2022**

RISK MANAGEMENT IN BANKING AND INSURANCE

Time Allowed: 3 Hours — **Full Marks: 100**

The figures in the margin on the right side indicate full marks.

SECTION – A (Compulsory)

1. Choose the correct option: [15 x 2 = 30]

(i) Which of the following is not a type of risk in the Banking Sector?
a. Credit Risk
b. Operational Risk
c. Market Risk
d. Account Risk

(ii) ________ risk is the potential loss due to changes in the value of a bank's assets or liabilities resulting from exchange rate fluctuations.
a. Interest rate
b. Equity
c. Foreign exchange
d. Commodity

(iii) The Asset-Liability Management (ALM) process rests on which of the following pillar/s?
a. ALM Information Systems
b. Management Information Systems
c. Information availability, accuracy, adequacy and expediency
d. All of the above

(iv) The objective of liquidity management is to _____________.
a. Ensure profitability
b. Ensure liquidity
c. Either of two
d. Both

(v) A floating exchange rate are _________.
a. Is determined by the national governments involved
b. Remains extremely stable over a long period
c. Is determined by the actions of central banks
d. Is allowed to vary accordingly to market forces

(vi) Bonds are ____________.
a. Fixed Income Securities
b. Permanent Income Securities
c. Fluctuating Income Securities
b. Matured Income Securities

(vii) Exchange Traded Currency Future is ________________.
a. Derivative Contract
b. Future Contract
c. Option Contract
b. All of the above

(viii) **If you sold a short contract on financial futures, you hope interest rates will ____________.**
- a. rise
- b. fall
- c. are stable
- d. fluctuate

(ix) **In foreign financial markets, the growth is represented by the factors such as ______________.**
- a. Savings in foreign countries
- b. Investment Opportunities
- c. Accessible Information
- d. All of the above

(x) **Which of the following involves proportionate sharing of the insurance among more than one insurer?**
- a. Premium
- b. Cover note
- c. Reinsurance
- d. Co-insurance

(xi) **The risk which arises because of change in major economic, social, cultural and political factors are ______________.**
- a. Particular Risk
- b. Fundamental Risk
- c. Speculative Risk
- d. Dynamic Risk

(xii) **A General Insurance company is exposed to which of the following types of risks?**
- a. Underwriting
- b. Reinsurance
- c. Operational
- d. All of the above

(xiii) **Which of the following is not an objective of Actuarial Society of India?**
- a. Restrict the advancement of actuaries in India
- b. Facilitating research on the subject relevant to actuarial sciences
- c. Opening avenues to promote communication between different members of the profession
- d. Providing the necessary guidance for those studying actuarial sciences in India

(xiv) **________ increases the frequency of loss.**
- a. Peril
- b. Subjective risk
- c. Hazard
- d. Objective risk

(xv) **Which among the following is not a pure risk?**
- a. Personal risk
- b. Property risk
- c. Loss of income risk
- d. Strategic risk

Answer:

(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)	(viii)	(ix)	(x)	(xi)	(xii)	(xiii)	(xiv)	(xv)
d.	c.	d.	d.	d.	a.	a.	a.	b.	d.	b.	d.	a.	c.	d.

SECTION - B

(Answer any 5 questions out of 7 questions given. Each question carries 14 marks.)

2. (a) List the key differences between Risk and Uncertainty. [7]

(b) Demonstrate the types of Market Risks. [7]

Answer:

(a) The difference between risk and uncertainty can be drawn clearly on the following grounds:

- Risk is defined as the situation of winning or losing something worthy. Uncertainty is a condition where there is no knowledge about future events.
- Risk can be measured and quantified, through theoretical models. Conversely, it is not possible to measure uncertainty in quantitative terms, as future events are unpredictable.
- The potential outcomes are known in risk, whereas in the case of uncertainty, the outcomes are unknown.
- Risk can be controlled if proper measures are taken to control it. On the other hand, uncertainty is beyond the control of the person or enterprise, as the future is uncertain.
- Minimization of risk can be done, by taking necessary precautions. As opposed to the uncertainty that cannot be minimized.
- In risk, probabilities are assigned to a set of circumstances which is not possible in case of uncertainty.

There is an old saying, "No risk, no gain", so if any enterprise wants to survive in the long run, it has to take calculated risks where the probability of loss is comparatively less, and the chances of gains are higher. Uncertainty is inherent in every business which cannot be avoided, and the business person has no idea about what will happen next, i.e., the outcome is unknown.

(b) Different Types of Market Risks:

1. **Interest Rate Risk:**
Interest rate risk arises from unanticipated fluctuations in the interest rates due to monetary policy measures undertaken by the Central Bank. The yields offered on securities across all markets must get equalized in the long run by adjustment of market demand and supply of the instrument. Hence, an increase in the rates would cause a fall in the security price. It is primarily associated with fixed-income securities.

2. **Commodity Risk:**
Certain commodities, such as oil or food grain, are necessities for any economy and complement the production process of many goods due to their utilization as indirect inputs. Any volatility in the prices of the commodities trickles down to affect the performance of the entire market, often causing a supply-side crisis.

   Such shocks result in a decline in not only stock prices and performance-based dividends, but also reduce a company's ability to honour the value of the principal itself.

3. **Currency Risk:**

Currency risk is also known as exchange rate risk. It refers to the possibility of a decline in the value of the return accruing to an investor owing to the depreciation of the value of the domestic currency. The risk is usually taken into consideration when an international investment is being made.

To mitigate the risk of losing out on foreign investment, many emerging market economies maintain high foreign exchange reserves to ensure that any possible depreciation can be negated by selling the reserves.

4. **Country Risk:**

Many macro variables that are outside the control of a financial market can impact the level of return due to an investment. They include the degree of political stability, level of fiscal deficit, proneness to natural disasters, regulatory environment, ease of doing business, etc. The degree of risk associated with such factors must be taken into consideration while making an international investment decision.

3. (a) Discuss – Credit Default Swap and give some examples. [7]

(b) Discuss how do you know if a company is at risk of going bankrupt? [7]

Answer:

(a) The following are often signs of trouble:

- Dwindling cash and/or losses, especially if they represent a trend
- Abrupt dismissal of the company auditor
- Dividend cuts or the elimination of dividends
- Departure of senior management
- Insider selling, especially large or frequent transactions following negative news
- Selling off a product line to raise cash
- Cuts in perks like health benefits or pensions

(b) A Credit Default Swap (CDS) is the most highly utilized type of credit derivative. In its most basic terms, a CDS is similar to an insurance contract, providing the buyer with protection against specific risks. Most often, investors buy credit default swaps for protection against default, but these flexible instruments can be used in many ways to customize exposure to the credit market.

Credit Default Swap (CDS)

Credit Default Swap (CDS) is a financial instrument for swapping the risk of debt default. Credit default swaps may be used for emerging market bonds, mortgage-backed securities, corporate bonds, and local government bonds.

The buyer of a credit default swap pays a premium for effectively insuring against a debt default. He receives a lump sum payment if the debt instrument defaults.

The seller of a credit default swap receives monthly payments from the buyer. If the debt instrument defaults, they have to pay the agreed amount to the buyer of the credit default swap.

Example of Credit Default Swap:

- An investment trust owns £1 million in corporate bonds issued by a private housing firm.
- If there is a risk the private housing firm may default on repayments, the investment trust may buy a CDS from a hedge fund. The CDS is worth £1 million.
- The investment trust will pay interest on this credit default swap of say 3%. This could involve payments of £30,000 a year for the duration of the contract.
- If the private housing firm doesn't default. The hedge fund gains the interest from the investment bank and pays nothing out. It is simple profit.
- If the private housing firm does default, then the hedge fund has to pay compensation to the investment bank of £1 million the value of the credit default swap.
- Therefore, the hedge fund takes on a larger risk and could end up paying £ 1 million.

The higher the perceived risk of the bond, the higher the interest rate the hedge fund will require.

4. (a) **The Basel Committee has identified some types of operational risk events as having the potential to result in substantial losses. – Discuss.** **[7]**

(b) **International Banks provided following information about its-NPA account as on Mar 31, 2022.**
Total loans ₹ 40,000 Crores.
Standard Accounts ₹38,000 Crores including Direct Agriculture and SME loans of ₹10,000 Crores.
Sub-standard ₹800 Crores and out of which unsecured Sub-standard ₹200 Crores.
Doubtful up to 1 Year ₹800 Crores and Doubtful above 1 year up to 3 years ₹200 Crores and Doubtful above 3 Years ₹120 Crores and Loss Accounts ₹80 Crores.
All doubtful loans are fully secured.
Based on the above information calculate the following:
(i) Provision on general accounts.
(ii) The amount of provision on sub-standard loan accounts.
(iii) The amount of provision on doubtful loan accounts. **[7]**

Answer:

(a) **The Basel Committee has identified the following types of operational risk events as having the potential to result in substantial losses:**

- **Internal fraud**. For example, intentional misreporting of positions, employee theft, and insider trading on an employee's account.
- **External fraud**. For example, robbery, forgery, cheque kiting, and damage from computer hacking.
- **Employment practices and workplace safety**. For example, worker's compensation claims, violation of employee health and safety rules, organized labour activities, discrimination claims, and general liability.

- **Clients, products, and business practices**. For example, fiduciary breaches, misuse of confidential customer information, improper trading activities on the bank's account, money laundering, and sale of unauthorized products.
- **Damage to physical assets**. For example, terrorism, vandalism, earthquakes, fires, and floods.
- **Business disruption and system failures**. For example, hardware and software failures, telecommunication problems, and utility outages.
- **Execution, delivery, and process management**. For example, data entry errors, collateral management failures, incomplete legal documentation, unauthorized access is given to client accounts, non-client counterparty mid- performance, and vendor disputes.

(b)

(i) Provision on General accounts = ₹28,000 × 0.4% = ₹ 112 Crores + Provision on direct agriculture and SME accounts = ₹ 10,000 × 0.25% = 25 Crores.
Total provision = ₹ 112 + ₹25 = ₹137 Crores.

(ii) Secured Sub-standard accounts = ₹ 600 × 15% = ₹90 Crores + Unsecured Sub-standard ₹ 200 × 25% = ₹ 50 Crores.
Total Provision = ₹140 Crores

(iii) Doubtful Category-1
= ₹ 800 x 25% = ₹200 Crores + Doubtful Category -2 = ₹ 200 × 40% = ₹ 80 Crores + Doubtful Category -3 = ₹ 120 × 100 = ₹ 120 Crores
Total provision = ₹200 + ₹80 + ₹ 120 = ₹400 Crores

5. (a) International Bank has paid up capital of ₹200 Crores, free reserves of ₹600 Crores, provisions and contingencies reserves ₹400 Crores, Revaluation Reserve of ₹600 Crores, Perpetual non-Cumulative Preference Shares of ₹800 Crores, and Subordinated Debt of ₹600 Crores. The Risk Weighted Assets for Credit and Operational Risk are ₹20,000 Crores and for-Market Risk ₹8,000 Crores.
Based on the above information, determine the following:
(i) The amount of Tier-1 capital.
(ii) The amount of Tier-2 capital.
(iii) The capital adequacy ratio of the bank. [7]

(b) List the roles of IRDAI in insurance sector. **[7]**

Answer:

(a)

1. Tier-1 = Capital + Free Reserves + Perpetual non-cumulative preference shares = ₹ 200 Crores + ₹600 Crores + ₹ 800 Crores =- ₹ 1,600 Crores.

2. Tier II = (Provisions and Contingencies Reserves Maximum 1.25% of Risk Weighted Assets) + (Revaluation Reserve at 55% Discount) + (Subordinated Debts)
= ₹ 350 Crores + ₹ 270 Crores (₹ 600 Crores x 45%, at 55% discount) + ₹ 600 Crores = ₹ 1,220 Crores.

3. Tier-1 = Capital + Free Reserves + Perpetual Non-cumulative Preference Shares = ₹ 200 Crores + ₹ 600 Crores + ₹ 800 Crores = ₹ 1,600 Crores

Tier II = (Provisions and Contingencies Reserves Maximum 1.25% of Risk Weighted Assets) + (Revaluation Reserve at 55% Discount) + (Subordinated Debts)

= ₹ 350 Crores + ₹ 270 Crores (₹ 600 Crores x 45%, at 55% discount) + ₹ 600 Crores = ₹ 1,220 Crores.

Total Capital Fund = ₹ 1600 Crores + ₹ 1220 Crores = ₹ 2,820 Crores.

Capital Adequacy Ratio: ₹ 2820 Crores / ₹ 28000 Crores = 10.07%

(b) Role of IRDAI in the insurance sector:

- IRDAI issues a certificate of registration to the Life Insurance Company and also renews, modifies, withdraws, suspends and cancels the registration.
- The regulatory body secures policyholder's interests in areas like assigning of policy, nomination by policyholders, insurable interest, settlement of insurance claim, surrender value of the policy, and other terms and conditions applicable to an insurance contract.
- It specifies the requisite qualifications, code of conduct and practical training required for insurance intermediaries and agents.
- IRDAI makes certain that the code of conduct is followed by surveyors and loss assessors.
- The autonomous body promotes efficiency in the conduct of the insurance business.
- It also promotes and regulates professional organisations connected with the insurance and reinsurance business.
- It levies fees and other charges for carrying out the purposes of the IRDAI Act.
- IRDAI carries out functions like inspection, conducting inquiries and investigations, including an audit of the insurers, insurance intermediaries and other organisations involved with the insurance business.
- The rates, advantages, terms and conditions that may be offered by insurers with respect to general insurance business are also controlled and regulated by the regulatory body.
- It also specifies the form and manner in which books of account should be maintained, and the statement of accounts should be rendered by insurers and insurance intermediaries.
- IRDAI monitors the investment of funds by insurance companies and governs the maintenance of the margin of solvency.
- It also judges the disputes between insurers and intermediaries or insurance intermediaries.
- It supervises the functioning of the Tariff Advisory Committee.
- IRDAI specifies the percentage of premium income of the insurer to finance schemes for promoting and regulating professional organisations.
- It specifies the percentage of life insurance and general insurance business to be undertaken by the insurer in the rural or social sector.

With so many roles, the IRDAI maintains the standard of the industry and takes measures to eliminate insurance frauds.

The insurance business in India is regulated by them and they supervise the functioning of Life Insurance and General Insurance companies that are operating in the country.

6. (a) Discuss the disqualifications of an Insurance Agent. **[7]**

(b) Discuss the benefits availed by a Life Insurance Policy Holder. **[7]**

Answer:

(a) Following are the disqualifications of an Insurance Agent:

1. that the person is a minor;
2. that he is found to be of unsound mind by a court of competent jurisdiction;
3. that he has been found guilty of criminal misappropriation or criminal breach of trust or cheating or forgery or an abetment of or attempt to commit any such offence by a court of competent jurisdiction; Provided that where at least five years have elapsed since the completion of the sentence imposed on any person in respect of any such offence, the Authority shall ordinarily declare in respect of such person that his conviction shall cease to operate as a disqualification under this clause;
4. that in the course of any judicial proceeding relating to any policy of insurance or the winding up of an insurer or in the course of an investigation of the affairs of an insurer it has been found that he has been guilty of or has knowingly participated in or connived at any fraud, dishonesty or misrepresentation against an insurer or insured;
5. that he does not possess the requisite qualifications or practical training or passed the examination, as may be specified by the regulations;
6. that he has not passed such examination as may be specified by the regulations;
7. that he has violated the code of conduct as may be specified by the regulations.

(b) A policyholder can avail the following benefits:

- Nomination facility: The policyholder can nominate his/her beneficiary, and can also make changes to the nomination.
- Loan facility: Loan facility is available against this policy. The policyholder can pledge his/her policy as a collateral to the Heads of the Region/ Circle on behalf of the President of India, once the policy has attained three years maturity in case of an Endowment Assurance policy and four years policy period has been completed in the case of a Whole Life Insurance policy. Assignment facilities are also available under this scheme.
- Policy Revival: A policyholder can revive a lapsed policy. The policy can be revived when policy has lapsed under the following conditions -
  - ✓ Policy has lapsed after six successive non-payments of premium with the policy being in effect for less than three years.
  - ✓ Policy has lapsed after 12 successive non-payments of premium where policy has been in effect for more than three years.
  - ✓ Duplicate Policy Document: A duplicate policy document will be issued to the policyholder if he/she has lost the original document. This also applies to the case where the original policy document is mutilated, burned or torn and the insured wants a duplicate of the same.
  - ✓ Conversion of Policy: This policy can be converted from a Whole Life Assurance policy to an Endowment Assurance Policy. An Endowment Assurance Policy can be converted to another Endowment Assurance plan as per the regulations and guidelines laid down by the insurer.

7. (a) Demonstrate the five steps to perform an effective risk assessment. [7]

(b) In an insurance sector marketing risk management involves several steps that can help teams avoid some of these risks from the start or be ready to respond when they do arise – discuss.[7]

Answer:

(a) Five steps to perform an effective risk assessment:

Step 1: Designate a Risk Manager: The risk manager can be an employee, several employees, or a vendor responsible for the overarching information security program.

Step 2: Identify Reasonably Foreseeable Internal and External Threats: These threats arise from potential unauthorized access, transmission, disclosure, misuse, alteration, or destruction of the protected information. Moreover, the threats identified need to incorporate those from internal systems or third-party service providers.

Step 3: Assess the Likelihood and Estimate Damage: Considering the private nature of the information that insurance companies collect, they must assess the likelihood that cybercriminals will target the company's databases and estimate potential financial, reputational, and legal risks.

Step 4: Review Current Policies, Procedures, Systems, and Safeguards: Determine how well the current controls protect data; this provides insight into additional cybersecurity needs. When reviewing information systems, insurance companies need to look at all aspects of their controls. To do this, they must review and assess network and software designs first.
They also need to assess the risks posed by their current information classification, governance, processing, storage, transmission, and disposal procedures. Moreover, they need to understand how well their current detection, protection, and response processes secure the information from attacks, intrusions, and system failures. Finally, they need to assure continuous, relevant training for employees and managers.

Step 5: Implement Procedures and Safeguards: Once identify shortcomings in cybersecurity controls, implement mitigation measures as necessary to reduce the risk to whatever tolerance has been defined by board.
Beyond that, the effectiveness of cybersecurity controls will change as insurance companies incorporate new technologies and as cybercriminals evolve their threat methodologies. So, insurance firms should re-perform their risk assessment at least once a year to assure continued control effectiveness.

(b) Marketing risk management involves several steps that can help teams avoid some of these risks from the start or be ready to respond when they do arise.

Assessment: Throughout the planning process, marketers should conduct a marketing risk assessment to identify potential risks that could impact activities and campaigns. These could be as simple as identifying the inclement weather trends that might impact production, from hurricane season in coastal areas or snowstorms in cold weather locations. The team might also brainstorm issues that might arise with competitor pricing based on past data.

Analysis: Analysis is the next step and involves considering how likely these events are to occur, how often they have happened in the past, and any data we have that will help us determine which risks are most likely to play out.

Planning: Next, the marketing team will adjust marketing plans based on the identified risks and the marketing risk analysis that determined their likelihood. Alternative plans should be included where possible, so marketing teams know how to adjust their activities should one of the risks turn into reality. For instance, a marketing plan could include an alternative plan should a production or distribution system encounter inclement weather.

Monitoring: Finally, the marketing team needs to continually monitor marketing activities for risk throughout the planning phases as well as execution. Continual assessment of marketing risk can help marketing teams stay ahead of potential problems and employ alternative plans when necessary.

While everyone on the team should be mindful of potential risks, it can be a smart strategy to designate a single team member to assess risk regularly throughout the planning process. Having alternate plans in place ahead of time can significantly improve marketing performance by enabling teams to pivot to a pre-planned alternative without missing a beat. This will help to cut down on any losses the company might have otherwise incurred.

8. (a) International Bank has come out with a policy for its branches for acceptance of deposits and granting of advances. its branches have taken deposits and allowed loans as under:

(i) One of its branches accepted a deposit of ₹10 Lacs. which is to double in 10 years. These funds have been invested by the bank in a 3 Years Bond carrying an interest rate of 13%. Which kind of risks the bank is facing?

(ii) A branch has given a loan out of deposits at a floating rate. The rate of interest on deposit has been linked by the bank with 91 days treasury bill rate and for the loan, it is linked to 364 days treasury bill rate. What kind of risk it is?

(iii) The bank has advised its branches that while sanctioning a term loan, they must put a condition that premature payment will not be accepted in any circumstances. By putting this condition, the bank has avoided which type of interest rate risk? [7]

(b) The Term, whole life, endowment, annuity policies or the combination of policies are available in the market. The best policy is the one that best meets your financial needs. You have to select the policy according to your needs.

Suggest suitable life insurance policies for the given situations:

(i) You are at the age of 25. You just joined an organization. You are recently married. Now you cannot spend more on life insurance.

(ii) You are the only earning member in your family. You purchased a flat by taking a loan from housing finance. As long as you are there you can pay EMIs regularly. You want to retain the house for your family members even in your absence.

(iii) You are at the beginning of career; you want to combine both insurance and saving. But the combination of this saving and insurance is costly. Right now, you cannot invest much, having dependents and you want to invest later after settling in the career. [7]

Answer:

(a)

(i) The bank has accepted a deposit with a maturity of 10 years, but the investment has to be rolled over after 3 years and will pose the reinvestment risk.

(ii) Where the interest rates on deposits and advances can vary and not necessarily identically, the yield curve risk arises.

(iii) Embedded risk represents a situation where the counterparty is given the option to terminate the transaction before the fixed price of the contract.

(b)

(i) For these situations, the suggested best policy is Term Insurance Policy. These plans offer life insurance cover for the specific number of years, at least cost. The premium of Term Insurance is comparatively low at the age of 25. Since the entire premium goes towards the cost of insurance, there is only risk cover and no saving element is involved.

(ii) The best policy for this situation is the Mortgage Redemption Insurance policy. These plans offer life insurance cover for the specific number of years like till the loan is cleared (or on death, an outstanding loan is covered) at the least cost.

(iii) The best policy for this situation is the Convertible Term insurance policy. This plan offers life insurance cover for the specific number of years, and at the same time it also facilitates to convert this policy into endowment policy (when your income increases) which includes saving element.