FINAL EXAMINATION SET 1

MODEL ANSWERS TERM – JUNE 2023

PAPER – 20B

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.
Where considered necessary, suitable assumptions may be made and
clearly indicated in the answer.

SECTION – A : RISK MANAGEMENT IN BANKING

Answer to Question No. 1 and 6 are compulsory; answer any three from Question No. 2, 3, 4 & 5.

1. (a)

Sl. No.	Answer	Justification
(i)	(d)	**Account Risk** is Not a type of risk in Banking Sector. The major risks for banks include credit, operational risk, market and liquidity risk. Since banks exposed to variety of risk, they have well-constructed risk management infrastructures and are required to follow the regulator regulations. Set the regulations to counteract risks and protect depositors.
(ii)	(c)	Operational Risk is the **risk of loss due to errors**, interruptions, or damages caused by People, Systems, or Processes. Operational Risk in the Banking System is not a new concept. It has been elevated to a distinct risk category that can shape the risk profiles of financial institutions and banks. This elevation is mainly due to the Basel Committee on Banking Supervision (BCBS).
(iii)	(c)	**Market Risk** is "the risk of losses in on and off-balance sheet positions arising from movements in market prices". The most common types of market risks include interest rate risk, equity risk, currency risk, and commodity risk. Interest rate risk covers the volatility that may accompany interest rate fluctuations due to fundamental factors, such as Central Bank announcements related to changes in Monetary Policy.
(iv)	(b)	Examples of **Operational Risk** would include payments credited to the wrong account or executing an incorrect order while dealing in the markets. Operational Risk summarizes the uncertainties and hazards a Bank face when it attempts to do its day-to-day business activities with a given task. Operational risk is heavily dependent

		on the human factor mistakes or failures due to actions or decisions made by a company's employees.
(v)	(a)	**Credit Risk** is the risk that arises from the possibility of non-payment of loans by the borrowers. Credit Risk is the biggest risk for banks. It occurs when borrowers or counterparties fail to meet contractual obligations. An example is when borrowers default on a principal or interest payment of a loan. Defaults can occur on mortgages, Housing Loans and business loans including corporate loans etc.
(vi)	(d)	**Systemic Risk** arises because of the fact that the financial system is one intricate and connected network. Systemic risk is the financial risk that possibly threatens the entire business, enterprise, entity, or economy, leading to its abolition. It begins with affecting units at a smaller scale and continue transmitting the effects to larger entities, thereby hampering the financial mechanism of the economy as a whole.
(vii)	(d)	The major **components of Market Risks** are: 1. Interest Rate Risk. 2. Equity Risk. 3. Foreign Exchange Risk etc. Market Risk is the risk of loss due to the factors that affect an entire market or asset class. Market Risk is also known as undiversifiable risk because it affects all asset classes and it unpredictable. The investor (Bank) can only mitigate this type of risk by hedging a portfolio. Four primary sources of risk affect the overall market, interest rate risk, equity price risk, foreign exchange risk, and commodity risk.
(viii)	(a)	When Bank's image and public standing is in doubt and leads to public's loss of confidence in a bank, it is called as Reputational Risk. **Reputational Risk** is the risk of failure to meet stakeholder expectations as a result of any event, behaviour, action or inaction, either by Bank itself, our employees or those with whom who are associated, that may cause stakeholders to form a negative view of the Bank.

2. (a) Sovereign risk is a country's probability of missing a debt obligation in its present economic status. Sovereign risks come in many forms and pose a considerable challenge to the banking system and a country's financial stability in general.

Strong central banks will impose foreign exchange regulations to reduce the value of a foreign exchange contract, thus minimizing the risk of default. Some key factors that influence a country's sovereign risk include natural disasters, political instability, and refusal to comply with the previous payment agreement.

One of the problems associated with lending is ensuring that both parties to the contract adhere to the loan's terms and conditions. Generally, it is difficult to ensure that the borrower abides by the terms set out in the bond contract to timely principal and interest payments.

There are legal obligations that are enforceable in a court, and those who cannot meet their debt obligations may file for bankruptcy. However, repaying the debt is, in large part, voluntary but are encouraged to avoid indirect penalties imposed on countries that do not honour their loan obligations.

Furthermore, no systematic procedure is similar to bankruptcy, by which a country owing a large amount of debt can adopt to discharge its obligations. As a result, a sovereign risk arises when a country is not in a position to service its foreign debt.

Sources of a Sovereign Risk

Sovereign risk arises from several sources. Foreign exchange traders face sovereign risk when a foreign country breaks up from its currency union. For example, foreign currency devaluation can affect the currency trade and alter currency benefits to traders.

Another potential source of sovereign risk is when the government lacks sufficient resources when its bonds are due to mature, rendering it unable to honour foreign debt obligations. Sovereign risk may also result from the collapse of the economic environment due to increasing inflation, making it difficult for the government to honour maturing debt obligations.

(b) The capital adequacy ratio is calculated by dividing a bank's capital by its risk-weighted assets. Currently, the minimum ratio of capital to risk-weighted assets is 9% under Basel II and 11.5% (which includes a 2.5% conservation buffer) under Basel III. High capital adequacy ratios are those that are higher than the minimum requirements under Basel II and Basel III.

A minimum capital adequacy ratio is critical in ensuring that banks have enough cushion to absorb a reasonable amount of losses before they become insolvent and consequently lose depositors' funds.

The capital used to calculate the capital adequacy ratio is divided into two tiers. The two capital tiers are added together and divided by risk-weighted assets to calculate a bank's capital adequacy ratio. Risk-weighted assets are calculated by looking at a bank's loans, evaluating the risk and then assigning a weight. When measuring credit exposures, adjustments are made to the value of assets listed on a lender's balance sheet.

All of the loans the bank has issued are weighted based on their degree of credit risk. For example, loans issued to the government are weighted at 0.0%, while those given to individuals are assigned a weighted score of 100.0%.

Risk-Weighted Assets:

Risk-weighted assets are used to determine the minimum amount of capital that must be held by banks and other institutions to reduce the risk of insolvency. The capital requirement is based on a risk assessment for each type of bank asset. For example, a loan that is secured by a letter of credit is considered to be riskier and requires more capital than a mortgage loan that is secured by a house.

Off-balance sheet agreements, such as foreign exchange contracts and guarantees, also have credit risks. Such exposures are converted to their credit equivalent figures and then weighted in a similar fashion to that of on-balance sheet credit exposures. The off-balance sheet and on-balance sheet credit exposures are then added together to obtain the total risk-weighted credit exposures.

Capital Adequacy Ratio Vs. Solvency Ratio:

Both the Capital Adequacy Ratio and the Solvency Ratio provide ways to evaluate a company's ability to meet financial obligations.

However, the Capital Adequacy Ratio is applied specifically to banks and measures their abilities to overcome financial losses related to loans they've made. The solvency ratio debt evaluation metric is used to measure whether a company has enough available cash to meet its own short- and long-term debt obligations. Solvency ratios below 20% indicate an increased likelihood of default.

The solvency ratio because it measures actual cash flow rather than net income, not all of which may be readily available to a company to meet debt obligations. The solvency ratio is best used to compare debt situations of similar firms within the same industry, as certain industries tend to be significantly more debt-heavy than others.

3. (a) Interest rate risk (IRR) for a financial institution is similar to changing raw material costs for a manufacturing organization. If a financial institution like bank, non-banking finance company (NBFC) or housing finance company (HFC) is not able to manage interest rate risk properly, then it runs the risk of running into losses just like any manufacturing organization will do if it does not manage raw material costs properly.

Financial institutions (FIs) represent businesses where they borrow money from one counterparty and lend it to another counterparty. A financial institution may borrow money from depositors (current and savings account or fixed deposits) or investors in commercial papers (CPs) or debentures or corporate bonds etc. Thereafter, the financial institution lends this money to entities like individuals (home loans, consumer loans etc.) or corporates (working capital loans, project loans etc.)

Therefore, a financial institution pays a rate of interest to the depositors and receives a rate of interest from borrowers. If it receives a higher interest rate from its borrowers than what it pays to its depositors, then the financial institution makes a profit. Otherwise, it makes a loss.

If an investor compares it with a manufacturing organization, then the interest paid to the depositors is the cost of goods sold (COGS) or raw material cost for a financial institution. The interest rate received from the borrowers is the sales price of goods. If a manufacturing organization receives a sales price of goods, which is less than the cost of the raw material, then it will make a loss. Similarly, if a financial institution receives a lower interest rate from borrowers than what it has to pay to its depositors, then the financial institution will make a loss.

Many times, financial institutions raise money from depositors/investors for a short duration (a few months like CP or CASA) and then use this money to give long-term loans (many years like home loans). In such cases, the financial institution has to keep renewing its short-term borrowings from depositors/investors so that it can keep its long-term loans intact. This creates a situation of asset liability mismatch (ALM).

ALM is an important risk for any financial institution because the counterparties, which have given it short-term funds, may demand it back whereas the FI would not have money to pay them back because all its money would be stuck in long-term loans given by it.

Apart from the asset liability mismatch, the habit of raising money from short term depositors/investors and lending it for long-term loans raises another risk for financial institutions, which is called interest rate risk (IRR).

Interest rate risk arises when the rate at which the loans are given by the financial institution is fixed whereas the rate at which it has raised money from depositors/investors is variable. If the depositors ask for a higher rate from the financial institution and it is not able to pass on this increased cost of funds to its borrowers, then the financial institution faces the risk of losses. This is called interest rate risk (IRR). Interest rate risk further increases in cases where the loans given by the financial institution with fixed interest rate are long-term loans and the deposits raised at variable interest rate are short-term deposits like commercial papers (CPs).

(b) (i) **Types of Market Risk involved in banking business are as under:**

Interest rate risk: Interest rate risk is the probability that variations in the interest rates will have a negative influence on the quality of a given financial instrument or portfolio, as well as on the institution's condition as a whole. The risk affects the Net Interest Margin (NIM).

Currency risk: Currency risk is the risk where the fair value or future cash flows of a given financial instrument fluctuate as a result from changes in the currency exchange rates.

Price risk: Price risk occurs when the fair value or future cash flows of capital and

debt financial instruments (stocks, bonds, indexes and derivatives connected with them) fluctuate as a result from market prices' changes, no matter whether these changes are caused by factors typical for individual instruments or for their issuer (counterparty), or by factors related to all the instruments traded on the market. It arises if investment is sold prematurely.

Default or Credit Risk: Credit risk is more simply defined as the potential of a bank borrower or counterparty to fail to meet its obligations in accordance with the agreed terms. For most banks, loans are the largest and most obvious source of credit risk. It is the most significant risk, more so in the Indian scenario where the NPA level of the banking system is significantly high. It is prevalent in case of loans.

Operational Risk: It arises due to failed internal processes, people or system or from external events like, frauds, incompetency of staff, faulty documentation, noncompliance etc.

Strategic Risk: This risk arises due to adverse business decisions, improper implementation of decisions.

(ii) **Difference between Counterparty Risk and Country Risk:**

Counterparty Risk: This is a variant of Credit risk and is related to non-performance of the trading partners due to counterparty's refusal and or inability to perform. The counterparty risk is generally viewed as a transient financial risk associated with trading rather than standard credit risk.

Country Risk: This is also a type of credit risk where non-performance of a borrower or counterparty arises due to constraints or restrictions imposed by a country. Here, the reason of non-performance is external factors on which the borrower or the counterparty has no control.

4. (a) The increasing importance of credit risk modelling can be attributed to the following three factors:

1. Banks became more concerned for treatment of credit risk.
2. New markets are emerging in credit derivatives and the marketability of existing loans is increasing through securitisation / loan sales market.
3. Regulators are concerned to improve the current system of bank capital requirements especially as it is related to credit risk.

Credit Risk Models have assumed importance due to the fact that they provide the decision maker with insight or knowledge that would not otherwise be readily available or that could be obtained at a high cost. In a marketplace where margins are fast disappearing and the pressure to lower pricing is unrelenting, models give their users a competitive edge.

Credit risk models are intended to assist banks in quantifying, aggregating and managing risk across geographical and product lines. The outputs of these models also play significant roles in banks' risk management and performance measurement processes, customer profitability analysis, risk-based pricing, active portfolio management and capital structure decisions. Credit risk modelling may lead to better internal risk management and may have the potential to be used in the supervisory oversight of banking organisations.

Credit risk may take the following forms:

(i) In the case of Direct Lending: Non-payment of principal / and or interest amount.

(ii) In the case of Guarantees or Letters of Credit: Not meeting financial commitments by constituents on crystallization of these contingent liabilities.

(iii) In the case of Treasury Operations: Default or cessation in payment or series of payments that have fallen due from the counter parties under respective contracts.

(iv) In the case of Securities Trading Businesses: Non settlement of funds/ securities.

(v) In the case of Cross-Border Exposure: Embargo or restrictions of free transfer of foreign currency funds imposed by foreign governments (Sovereigns).

(b) In the measurement of credit risk, models may be classified along three different dimensions. They are the techniques employed, the domain of applications in the credit process and the products to which they are applied.

Techniques Employed

The following are the more commonly used techniques:

- ✓ Econometric Techniques
- ✓ Neural networks
- ✓ Optimisation
- ✓ Rule-based or expert systems
- ✓ Hybrid Systems

Domain of Application

These models are used in a variety of domains:

- ✓ Credit approval
- ✓ Credit rating determination
- ✓ Risk premia
- ✓ Early warning
- ✓ Common credit language
- ✓ Collection strategies

Credit Risk Models: Approaches

The literature on quantitative risk modelling has two different approaches to credit risk measurement. The first approach is the development of statistical models through analysis of historical data. This approach was frequently used in the last two decades. The second type of modelling approach tries to capture distribution of the firm's asset value over a period of time.

Banks' credit exposures typically cut across geographical locations and product lines. The use of credit risk models offers banks a framework for examining this risk in a timely manner, centralising data on global exposures and analysing marginal and absolute contributions to risk. These properties of models may contribute to an improvement in a bank's overall ability to identify, measure and manage risk.

Credit risk models may provide estimates of credit risk (such as unexpected loss) which reflect individual portfolio composition; hence, they may provide a better reflection of concentration risk compared to non-portfolio approaches.

By design, models may be both influenced by, and be responsive to, shifts in business lines, credit quality, market variables and the economic environment. Consequently, modelling methodology holds out the possibility of providing a more responsive and informative tool for risk management.

5. (a) Operational risk has been defined by the Basel Committee on Banking Supervision as the risk of loss resulting from inadequate or failed internal processes, people and systems or from external events. This definition is based on the underlying causes of operational risk. It seeks to identify why a loss happened and at the broadest level includes the breakdown by four causes: people, processes, systems and external factors.

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 own account.

≈ External fraud: For example, robbery, forgery, cheque kiting, and damage from computer hacking.

≈ Employment practices and workplace safety: For example, workers 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, and unauthorized access given to client accounts, non-client counterparty mis-performance, and vendor disputes etc.

(b) **Composition of Regulatory Capital:** Banks are required to maintain a minimum Pillar 1 Capital to Risk-weighted Assets Ratio (CRAR) of 9% on an on-going basis

(other than capital conservation buffer and countercyclical capital buffer etc.). The Reserve Bank will take into account the relevant risk factors and the internal capital adequacy assessments of each bank to ensure that the capital held by a bank is commensurate with the bank's overall risk profile. This would include, among others, the effectiveness of the bank's risk management systems in identifying, assessing / measuring, monitoring and managing various risks including interest rate risk in the banking book, liquidity risk, concentration risk and residual risk. Accordingly, the Reserve Bank will consider prescribing a higher level of minimum capital ratio for each bank under the Pillar 2 framework on the basis of their respective risk profiles and their risk management systems. Further, in terms of the Pillar 2 requirements, banks are expected to operate at a level well above the minimum requirement.

Common Equity Tier 1 Capital Ratio =
(Common Equity Tier 1Capital / Credit Risk RWA* + Market Risk RWA + Operational Risk RWA)
*RWA = Risk Weighted Assets

Tier 1 Capital Ratio = (Eligible Tier 1Capital / Credit Risk RWA Market Risk RWA Operational Risk RWA)

Total Capital (CRAR#) =
(Total Capital (Tier 1Capital Tier 2 Capital) / Credit Risk RWA + Market Risk RWA + Operational Risk RWA)
#CRAR = Capital to Risk Weighted Asset Ratio

Components of Capital
Total regulatory capital consists of the sum of the following categories:
(i) Tier 1 Capital (going-concern capital)
  (a) Common Equity Tier-1
  (b) Additional Tier
(ii) Tier 2 Capital (gone-concern capital)

Minimum regulatory capital requirement for Banks in India as per Basel III Accord:
With full implementation of capital ratios and Capital Conservation Buffer (CCB) the capital requirements are summarised as follows:

	Regulatory Capital	As % to RWAs
(i)	Minimum Common Equity Tier 1 Ratio	5.5
(ii)	Capital Conservation Buffer (comprised of Common Equity)	2.5
(iii)	Minimum Common Equity Tier 1 Ratio plus Capital Conservation Buffer [(i)+(ii)]	8.0
(iv)	Additional Tier 1 Capital	1.5
(v)	Minimum Tier 1 Capital Ratio [(i) +(iv)]	7.0
(vi)	Tier 2 Capital	2.0
(vii)	Minimum Total Capital Ratio (MTC) [(v)+(vi)]	9.0
(viii)	Minimum Total Capital Ratio plus Capital Conservation Buffer [(vii+(ii)]	11.5

6. RWAs for Credit Risk = ₹ 10,000 Crores
RWAs for Market Risk = ₹ 500 / .09 = ₹ 5,556 Crores
RWAs for Operational Risk = ₹ 300 / .09 = ₹ 3,333 Crores
Total RWAs = ₹ 18,889 Crores
Tier I Capital =₹ 1,400 Crores
Tier II Capital = ₹ 1,200 Crores
Total Capital = ₹ 2,600 Crores

Tier-I CRAR = (Eligible Tier-I Capital Funds) ÷ (Total RWAs) = 1,400 / 18,889
= 7.41% Total CRAR = (Eligible Total Capital Funds) ÷ (Total RWAs)
Total CRAR = 2600 /18,889
= 13.76%. [Answer for last part of the question is missing]

Capital Adequacy Ratio (CAR) is the measurement ratio that assesses the ability of banks to absorb losses. It standardizes the banks' abilities to pay off its liabilities, tackle credit and operational risks. The Central Bank sets the bar on the required number that the CAR must show, thereby helping banks analyse their commercial leverage.

At the time of winding up of the Bank, the depositors' assets are more important than the Bank's own finances. CAR ensures that a layer of safety is present for the bank to manage its own risk weighted assets before it can manage its depositors' assets.

SECTION – B : RISK MANAGEMENT IN INSURANCE

Answer to Question No. 7 and 11 are compulsory; answer any two from Question No. 8, 9 & 10.

7. **(a)**

Sl. No.	Answer	Justification
(i)	(a)	To be valid, a contract of insurance must also be for a legal purpose and not contrary to public policy. All illegal activities which are contrary to the public interest are not enforceable. The purpose of an agreement must be lawful. For example, gambling transactions are illegal and, therefore, unenforceable at law.
(ii)	(b)	In property insurance, the basic method for indemnifying the insured is based on the actual cash value of the damaged property at the time of loss and this cash value can be determined through three major methods such as (a) Replacement cost less depreciation. (b) Fair market value, and (c) Broad evidence rules.

8. (a) The duty of disclosure must be observed throughout the negotiations and continues until they are completed and the contract is operative. The contract is deemed to be operative when the proposal is accepted by the insurer. This is called the "condition of continued insurability" which operates from the date of the proposal and the date of its acceptance.

Material facts, which are to be disclosed, include the following:

(i) Facts which tend to render a risk proposed greater than normal.

(ii) Facts necessary to explain the exceptional nature of risk proposed for insurance where, without them, the insurer would justifiably believe the risk to be normal (Earlier proposal accepted with special conditions).

(iii) Facts which appear to suggest some special motive for insurance. e.g., Gross over-insurance (particulars of previous insurance to be disclosed).

(iv) Facts which show that the proposer himself is in some way abnormal. e.g., revival may have been declined in an earlier policy.

In the absence of an enquiry, the following facts need not be disclosed. Consequently, they have no effect on the validity of the contract:

a) Facts which lessen the risk proposed for insurance.

b) Facts which could or should be inferred by the insurer in the wake of the particulars being actually disclosed.

c) Facts of public knowledge, such as the existence of a state of war, or facts which should be known to the insurer in the ordinary course of his business.

d) Matters of law.

e) Facts with the possibility of discovery where the insurer has been given enough information to provoke enquiry on his part. The details furnished by the proposer in such circumstances must be adequate to fulfil his duty of disclosure.

f) Facts which can be reasonably concluded are a matter of indifference to the insurer, or regarding which he has waived information. e.g., if the proposer inserts a disk in an answer to a proposal form question and the insurer makes no further enquiry.

g) Facts which are superfluous to disclose by reason of a warranty in the proposed insurance.

(b) In a free look period, a policy can be cancelled without penalties. Typical premature withdrawal or surrender charges associated with a life insurance are not applied during the free look period. When a policy is cancelled within this period, the insured gets a full refund of the premium paid less any proportionate risk premium for the period on cover, expenses incurred by the insurer on medical examination and stamp duty charges.

Free look period is a consumer protection measure brought in by the Insurance Regulatory and Development Authority of India. It allows the insured to verify the detailed policy wordings, filled proposal forms and medical reports considered by the insurer, after the policy has been issued. In case she finds any discrepancy, she can cancel the policy. The free look period is 15 days from the date of receipt of the policy. The risk coverage start date is irrelevant to measure the free look period. The insured must give a written notice to the insurer to initiate cancellation.

9. (a) The basic requirements of an insurance contract are:

≈ Offer and acceptance.

≈ Consideration.

≈ Competent parties.

≈ Legal purpose.

Offer and Acceptance: An agent merely solicits or invites the prospective insured to make an offer. The applicant for insurance makes the offer, and the company accepts or rejects the offer. This accepting procedure is different for property, liability insurance and life insurance. In property insurance, the offer and acceptance can be oral or written and the agents have the power to bind their

companies through the use of a binder which is a temporary contract. But in life insurance, the agent does not have the power to bind the insurer. The application for life insurance is always in writing and it should be approved by the insurer before it is in force.

Consideration: It refers to the value that each party gives to the other. The insured's consideration is payment or a promise to pay the premium and an agreement to abide by the conditions in the policy. The insurer's consideration is the promise to do certain things which are specified in the contract.

Competent Parties: Insane persons, intoxicated persons and minors are not legally competent to enter into insurance contracts.

Legal Purpose: All illegal activities which are contrary to the public interest are not enforceable. A contract should have a legal purpose.

(b) It is an important legal principle. It states that the insured must be in a position to lose financially if a loss occurs, or to incur some other kind of harm if the loss takes place. To prevent gambling, to reduce moral hazard and to measure the amount of the insured's loss [in property insurance] all insurance contracts must be supported by an insurable interest. There is a difference between an insurable interest in property and liability insurance and life insurance.

In Property and Liability Insurance:

a. Ownership of property can support an insurable interest because he loses financially if his property is damaged.
b. Potential legal liability also can support an insurable interest in the property of the customer because these firms are legally liable for damage to the customers' goods caused by their negligence.
c. Secured creditors also have an insurable interest in the property pledged to them.
d. A contractual right also can support an insurable interest.
e. In property insurance, the insurable interest must exist at the time of the loss.

In Life Insurance there is no question of insurable interest if the life insurance is purchased on their own life. If the life insurance policy is purchased on the life of another person, this person should have an insurable interest on that person's life. Close ties of blood or marriage or a pecuniary interest will satisfy the insurable interest requirement in life insurance. And this requirement must be met only at the inception of the policy and not at the time of death. Life insurance is not a contract

of indemnity but is a valued policy that pays a stated sum upon the insured's death. [Answer for last part of the question is missing]

An example of insurable interest is a policyholder buying property insurance for their own house but not for their neighbour's house. The person does not have an insurable interest in any financial loss arising from damage to their neighbour's house.

Thus, the principle of insurable interest is based on no moral hazards in a policy. Moral hazard occurs when a policyholder has an incentive to cause damage to the property and claim insurance.

The principle of insurable interest also works along with the indemnification principle, which requires insurance policies to compensate a policyholder for the losses covered. Indemnification requires that insurers design such policies so as to appropriately cover the value of the asset at risk. Poorly designed insurance policies can create moral hazard and financial loss to an insurance company.

10. (a) A traditional classification of risk distinguishes between pure risk and speculative risk. Pure risk exists when a situation is characterized by uncertainty as to whether or not loss will occur. Pure risk does not admit the possibility of gain but only potentiality for loss. Examples of pure risk include prospect of untimely and premature death, likely damage to property by flood, earthquake, lightning and fire and catastrophic medical expenses. Speculative risk is present when an event can result in either a gain or a loss or status quo. Examples of situations involving speculative risk include individual's decisions to buy shares or investment decisions of business firms or business ventures and investing in real estate.

Three prime reasons warrant the distinction to be drawn between pure and speculative risks. While insurance companies basically insure pure risks, speculative risks are generally not considered insurable, barring a few exceptions like institutional portfolio investments.

Second, while the law of large numbers can be easily applied to pure risks, speculative risks are not easily amenable to the application of law of large numbers which facilitates prediction of future loss experience by insurance companies. A notable exception is the efficient manner in which casino operators apply the law of large numbers to the speculative risk of gambling.

Third, while the society is harmed by the presence of pure risk when a loss occurs, society may benefit despite the occurrence of loss from a speculative risk. There is no doubt that the society does not benefit from the loss arising from a pure risk situation. A company developing a new technology to produce computers at a lower

cost may benefit the society, as a whole while some existing computer companies may become bankrupt because of this development, is an example in this regard.
However, it is possible that in some situations both pure and speculative risks may exist. Likewise, some of the speculative risk decisions, which are motivated by earning profit, might have an impact on pure risk exposures. For example, developing and introducing a new product into the market by a manufacturing firm mainly entails speculative risk. In addition, the decision might also lead to a pure risk exposure such as potential product liability.

(b) The first step in the process of risk management by individuals, businesses and society is the assessment of risk. Risk assessment comprises identification and analysis of potential loss exposures. Such assessment has to be continuous and comprehensive. Individuals as well as their environment are not static but dynamic and do change, and so risk assessment has to be an ongoing activity. A person's risk profile undergoes significant change when he or she marries and has children. Likewise, a person's inventory of assets grows with fresh acquisition of assets over time and, as a result, his property risk profile changes over his life time. The legal environment a person faces is altered by enactment of new statutes and changes in case law. Because of these and other changes, individuals will have to continuously and suitably adjust their risk management efforts.
A business organization's exposure to loss is now managed by using a new risk management technique called risk mapping making use of a matrix plotting in loss frequency and loss severity. The risk mapping technique might not be particularly useful for managing risk exposures of individuals and families. However, it might be instructive to understand the technique with a view to applying it while discussing the techniques of risk control and risk financing for individuals and families. Loss frequency measures the likelihood of occurrence of a loss event and loss severity indicates the potential financial implication of the event.

11. (a) After having finalized the sale of the timber to Green Earth Public Ltd., Govind Rao has no insurable interest in the timber since it has become the property of the buyer, that is, Green Earth.
Insurable interest is the legal right of the owner of a property to insure the property. One of the conditions of an insurance policy is that the policyholder should have an insurable interest throughout the period of the policy. Further, during the tenure of the policy, the policyholder may lose his insurable interest by way of transfer of ownership, etc. In such a situation, he is no longer entitled to claim for loss to the insured property as the sold property no longer belongs to him.

Moreover, a shareholder or creditor of a company cannot insure the assets of a company, since the assets belong to the company. The company, which is an artificial person, has an insurable interest in the company's assets. Thus, in the given case, the timber has become the property of Green Earth and Govind Rao is not entitled to receive any compensation from the insurance company for the loss to the timber due to the fire.

(b) The owner of a property has the legal right to insure his property if its loss or damage is likely to affect him financially. This legal right of the owner is called insurable interest. The absence of an insurable interest renders an insurance policy void because one of the conditions of the policy is that the policyholder maintains an insurable interest throughout the period of the policy.

Instead of making the existence of an insurable interest a precondition for obtaining coverage, insurance policies, instead, limit the payment on any claim to the extent of the insured's interest. In addition to this, proof of loss forms that accompany insurance policies require the insured to specify all interests that he may have in the property. Limiting the payment of claims to the extent of an insured's interest and requiring the insured to specify all interests in the property is essential for claims adjusting. If it were possible for an insured to be able to collect more than the interest he has in the insured property, it would serve as an incentive for the insured to cause deliberate destruction to his property. Also, an insured's interest can change due to circumstances such as marriage, divorce, or additional mortgages. This can create opportunity for false claims if the amount recovered by the insured as insurance is not limited to the insured's actual interest.

By identifying all interests in the property, an adjuster is able to treat all parties fairly, without compromising on the insurer's rights. It also enables the adjuster to identify other coverages.

Insurable interest is an essential requirement for issuing an insurance policy that makes the entity or event legal, valid, and protected against intentionally harmful acts. People not subject to financial loss do not have an insurable interest. Therefore, a person or entity cannot purchase an insurance policy to cover themselves if they are not actually subject to the risk of financial loss.