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MCT-077

MASTER OF BUSINESS ADMINISTRATION IN FINANCIAL MARKETS (MBAFM)

00885

Term-End Examination

December, 2014

MCT-077 : CREDIT RISK ANALYSIS

Time : 3 hours *Maximum Marks : 100*

SECTION I

(Multiple Choice Questions)

Note : *Each question carries 2 marks.* *60*

1. When measuring credit risk, for the same counter party
   - (a) A loan obligation is generally rated higher than a bond obligation
   - (b) A bond obligation is generally rated higher than a loan obligation
   - (c) A bond obligation is generally rated the same as a loan obligation
   - (d) Loans are never rated so it is impossible to compare

2. Banks face the problem of __________ in loan markets because bad credit risks are the ones most likely to seek bank loans.

   (a) adverse selection

   (b) moral hazard

   (c) moral suasion

   (d) intentional fraud

3. If borrowers with the most risky investment projects seek bank loans in higher proportion to those borrowers with the safest investment projects, banks are said to face the problem of

   (a) Adverse credit risk

   (b) Adverse selection

   (c) Moral hazard

   (d) Lemon lenders

4. Banks attempt to screen good from bad credit risks to reduce the incidence of loan defaults. To do this, banks

   (a) specialize in lending to certain industries or regions

   (b) write restrictive covenants into loan contracts

   (c) expend resources to acquire accurate credit histories of their potential loan customers

   (d) do all of the above

5. A bank's commitment (for a specified future period of time) to provide a firm with loans up to a given amount at an interest rate that is tied to a market interest rate is called
   (a) credit rationing
   (b) a line of credit
   (c) continuous dealings
   (d) None of the above

6. When a lender refuses to make a loan, although borrowers are willing to pay the stated interest rate or even a higher rate, the bank is said to engage in
   (a) coercive bargaining
   (b) strategic holding out
   (c) credit rationing
   (d) collusive behaviour

7. Settlement risk in foreign exchange is generally due to
   (a) Notionals being exchanged
   (b) Net value being exchanged
   (c) Multiple currencies and countries involved
   (d) High volatility of exchange rates

8. Which of the following is ***not*** a credit event ?
   (a) Bankruptcy
   (b) Calling back a bond
   (c) Default on payments

9. Which of the following is Moody's lowest credit rating ?

(a) AAA 2

(b) BAA 1

(c) BAA 3

(d) BA 2

10. A company has a constant 30% per year probability of default. What is the probability the company will be in default after three years ?

(a) 34%

(b) 48%

(c) 66%

(d) 90%

11. A portfolio manager has been asked to take the risk related to the default of two securities A and B. She has to make a large payment if, and only if, both A and B default. For taking this risk, she will be compensated by receiving a fee. What can be said about this fee ?

(a) The fee will be higher if the default of A and B are highly correlated

(b) The fee will be lower if the default of A and B are highly correlated

(c) The fees is independent of the correlation between default of A and B

(d) None of the above

12. Which of the following are ***not*** rate-sensitive assets ?

   (a) Securities with a maturity of less than one year

   (b) Variable-rate mortgages

   (c) Fixed-rate mortgages

   (d) All of the above are rate-sensitive assets

13. Basel II was implemented in India in

   (a) 2008

   (b) 2009

   (c) 2012

   (d) Yet to be implemented

14. Considering arbitrary portfolios A and B, and their combined portfolio C, which of the following relationships always holds for VaRs of A, B and C ?

   (a) $VaR_A + VaR_B = VaR_C$

   (b) $VaR_A + VaR_B \geq VaR_C$

   (c) $VaR_A + VaR_B \leq VaR_C$

   (d) None of the above

15. Which of the following statement(s) is/are always correct ?

   (a) Payment in a credit swap is contingent upon a future credit event

   (b) Payment in total rate of return swap is not contingent upon a future credit event

   (c) Both a and b

   (d) None of the above

16. Which of the following is a type of credit derivatives ?

(a) A put option on corporate bond

(b) A total return swap on a loan portfolio

(c) A note that pays an enhanced yield in the case of a bond downgrade

(d) A put option on an off-the-run treasury bond

17. Capital is used to protect the bank from which of the following risks ?

(a) Risks with an extreme catastrophic financial impact

(b) High frequency low loss events

(c) Low frequency risks with significant severe financial impact

(d) High frequency uncorrelated events

18. A problem with risk-weighted capital asset ratios is that they

(a) are generally set too low

(b) put too much pressure on the profitability of banks

(c) are too complex to calculate

(d) do not take into account off-balance-sheet business

19. In the first to default swap, the default event is a default on

(a) any one of the assets in the basket

(b) all of the assets in the basket

(c) two or more assets in the basket

(d) None of the above

20. Based on a 90% confidence level, how many exceptions in back testing a VaR would be expected over a 250-day trading year ?

(a) 10

(b) 15

(c) 25

(d) 50

21. Which of the following credit risk models in Basel II attempts to recognize diversification effects through a granularity adjustment ?

(a) Standardized approach based on external credit ratings provided by external credit assessment institutions

(b) Standardized approach based on internal portfolio credit risk model

(c) Internal rating based approach using internal estimate of creditworthiness, subject to regulatory standards

(d) All of the above

22. Which of the following loans has the lowest credit risk ?

Loan	1 Year Probability of Default	Loss Give Default	Remaining Term in Months
(a)	1·99%	60%	3
(b)	0·90%	70%	9
(c)	1·00%	75%	6
(d)	0·75%	50%	12

23. According to the Basel Committee, which of the options below is ***not*** a qualitative standard that a bank must meet before it is permitted to use the Advanced Measurement Approach (AMA) for operational risk capital ?

(a) Internal and/or external regulators must perform regular reviews of the operational risk management processes and measurement systems. This review must include both the activities of the business units and of the independent operational risk function.

(b) There must be regular reporting of operational risk exposures and loss experiences to business unit management, senior management and to the board of directors.

(c) The bank's internal operational risk measurement system should not be integrated into the day-to-day risk management processes of the bank but should provide a general overview of the operational risks involved in the processes and operations.

(d) The bank must have an independent operational risk management function that is responsible for the design and implementation of the bank's operational risk framework.

24. You are asked to bid to insure a one-year loan against credit losses in an amount that best reflects the economic value of the insurance you provide. You bid

(a) your best estimate of the value of a put on the borrower with exercise price equal to the loan principal amount plus interest

(b) the VaR of the loan given by the Credit Metrics VaR model used by your firm

(c) the actuarial estimate of the credit loss

(d) a VaR estimate obtained from the KMV model

25. The potential future credit exposure profile peaks at maturity for which of the following instruments :

I. FX forwards

II. Interest rate swaps

III. Cross currency swaps with final exchange

(a) I only

(b) II only

(c) I and III

(d) I, II and III

26. As the CRO of a retail bank, you are presenting to your Risk Committee the benefits of securitizing a pool of mortgages. Which of the following would you use to support your arguments that this will benefit the bank ?

I. It will improve your bank's return on capital

II. It will immediately increase your bank's available capital

III. You will be able to offer an attractive yield to investors

IV. It will lower your borrowing costs

(a) I and III

(b) I, III and IV

(c) I, II, III and IV

(d) I, II and IV

27. Which of the following is ***not*** considered a traditional mechanism used by banks in mitigating credit risk ?

(a) Netting

(b) Credit quality migration

(c) Embedded put options

(d) Collateralization

28. Rank the following common credit risk mitigation options from greatest security to lowest security :

I. Parental guarantee

II. Letter of Credit

III. Securities as collateral

IV. Cash

(a) I, IV, III, II

(b) IV, III, II, I

(c) IV, II, III, I

(d) IV, II, I, III

29. A company has a constant 7% per year probability of default. What is the probability the company will be in default after three years ?

(a) 7%

(b) 19·6%

(c) 21%

(d) 22·5%

30. Which of the following would ***not*** generally decrease credit risk ?

(a) Entering into an interest-rate swap with a counter-party.

(b) Signing a legally-binding netting agreement covering a portfolio of OTC derivative trades with a counter-party.

(c) Clearing an existing trade through a clearing house.

(d) Purchasing a credit derivative from a AAA rated institution that pays USD 5 million if a bond defaults.

SECTION II

Note : *Answer any **four** from the following :* *20*

31. An investor holds a portfolio of ₹ 50 million. This portfolio consists of A rated bonds (₹ 20 million) and BBB rated bonds (₹ 30 million). Assume that the one year probabilities of default for A rated and BBB rated bonds are 2 and 4 percent respectively, and that they are independent. If the recovery value for A rated bonds in the event of default is 60 percent and the recovery value for BBB rated bonds is 40 percent, what is the one year expected credit loss from this portfolio ?

32. A commercial loan department lends to two different BB rated obligors for one year. Assume the one year probability of default for a BB rated obligor is 10% and there is zero correlation (independence) between the obligor's probability of defaulting. What is the probability that both obligors will default in the same year ?

33. Assume the annual volatility of the market is 20% and a stock's annual volatility is 30%. The β of the stock is 1·2. What are the correlation and covariance, respectively, between the stock and the market ?

34. The VAR on a portfolio using a 1-day horizon is ₹ 100 million. Find the VAR using a 10-day horizon.

35. Calculate the 1-year expected loss of a $ 100 M portfolio comprising 10 B rated issuers. Assume that the 1-year probability of default for each issuer is 6% and the average recovery value for each issuer is 6% and the average recovery value for each issuer in the event of default is 40%.

36. A portfolio consists of 17 uncorrelated bonds, each rated B. The 1-year marginal default probability of each bond is 5·93%. Assuming an even spread of default probability over the year for each of the bonds, what is the probability of exactly 2 bonds defaulting in the first month ?

SECTION III

Note : *Write short notes on any* ***four*** *of the following :* 20

37. Credit Default Swap

38. Total Rate of Return Swap

39. Basel Accord

40. Credit Rating Agencies

41. Mortgage Backed Securities

42. Industry Risk Analysis