

Fundamentals Level – Skills Module

Financial Management

Friday 5 December 2014



Time allowed

Reading and planning: 15 minutes

Writing: 3 hours

This paper is divided into two sections:

Section A – ALL 20 questions are compulsory and MUST be attempted

Section B – ALL FIVE questions are compulsory and MUST be attempted

Formulae Sheet, Present Value and Annuity Tables are on pages 11, 12 and 13.

Do NOT open this paper until instructed by the supervisor.

During reading and planning time only the question paper may be annotated. You must NOT write in your answer booklet until instructed by the supervisor.

This question paper must not be removed from the examination hall.

The Association of Chartered Certified Accountants

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Section A – ALL 20 questions are compulsory and MUST be attempted

Please use the space provided on the inside cover of the Candidate Answer Booklet to indicate your chosen answer to each multiple choice question.

Each question is worth 2 marks.

- 1 TKQ Co has just paid a dividend of 21 cents per share and its share price one year ago was \$3.10 per share. The total shareholder return for the year was 19.7%.

What is the current share price?

- A \$3.50
- B \$3.71
- C \$3.31
- D \$3.35

- 2 **Which of the following statements is/are correct?**

- 1 Securitisation is the conversion of illiquid assets into marketable securities
- 2 The reverse yield gap refers to equity yields being higher than debt yields
- 3 Disintermediation arises where borrowers deal directly with lending individuals

- A 2 only
- B 1 and 3 only
- C 2 and 3 only
- D 1, 2 and 3

- 3 **Which of the following statements are correct?**

- 1 Maximising market share is an example of a financial objective
- 2 Shareholder wealth maximisation is the primary financial objective for a company listed on a stock exchange
- 3 Financial objectives should be quantitative so that their achievement can be measured

- A 1 and 2 only
- B 1 and 3 only
- C 2 and 3 only
- D 1, 2 and 3

- 4 A company whose home currency is the dollar (\$) expects to receive 500,000 pesos in six months' time from a customer in a foreign country. The following interest rates and exchange rates are available to the company:

Spot rate 15.00 peso per \$
Six-month forward rate 15.30 peso per \$

| | Home country | Foreign country |
|-------------------------|--------------|-----------------|
| Borrowing interest rate | 4% per year | 8% per year |
| Deposit interest rate | 3% per year | 6% per year |

Working to the nearest \$100, what is the six-month dollar value of the expected receipt using a money-market hedge?

- A \$32,500
- B \$33,700
- C \$31,800
- D \$31,900

5 Which of the following statements is correct?

- A A bonus issue can be used to raise new equity finance
- B A share repurchase scheme can increase both earnings per share and gearing
- C Miller and Modigliani argued that the financing decision is more important than the dividend decision
- D Shareholders usually have the power to increase dividends at annual general meetings of a company

6 Which of the following statements is correct?

- A Tax allowable depreciation is a relevant cash flow when evaluating borrowing to buy compared to leasing as a financing choice
- B Asset replacement decisions require relevant cash flows to be discounted by the after-tax cost of debt
- C If capital is rationed, divisible investment projects can be ranked by the profitability index when determining the optimum investment schedule
- D Government restrictions on bank lending are associated with soft capital rationing

7 An investment project has a cost of \$12,000, payable at the start of the first year of operation. The possible future cash flows arising from the investment project have the following present values and associated probabilities:

| PV of Year 1 cash flow (\$) | Probability | PV of Year 2 cash flow (\$) | Probability |
|--------------------------------|-------------|--------------------------------|-------------|
| 16,000 | 0.15 | 20,000 | 0.75 |
| 12,000 | 0.60 | (2,000) | 0.25 |
| (4,000) | 0.25 | | |

What is the expected value of the net present value of the investment project?

- A \$11,850
- B \$28,700
- C \$11,100
- D \$76,300

8 Which of the following statements is correct?

- A Once purchased, currency futures have a range of close-out dates
- B Currency swaps can be used to hedge exchange rate risk over longer periods than the forward market
- C Banks will allow forward exchange contracts to lapse if they are not used by a company
- D Currency options are paid for when they are exercised

9 A company has 7% loan notes in issue which are redeemable in seven years' time at a 5% premium to their nominal value of \$100 per loan note. The before-tax cost of debt of the company is 9% and the after-tax cost of debt of the company is 6%.

What is the current market value of each loan note?

- A \$92.67
- B \$108.90
- C \$89.93
- D \$103.14

10 Which of the following statements concerning working capital management are correct?

- 1 Working capital should increase as sales increase
- 2 An increase in the cash operating cycle will decrease profitability
- 3 Overtrading is also known as under-capitalisation

- A** 1 and 2 only
- B** 1 and 3 only
- C** 2 and 3 only
- D** 1, 2 and 3

11 Which of the following is LEAST likely to fall within financial management?

- A** The dividend payment to shareholders is increased
- B** Funds are raised to finance an investment project
- C** Surplus assets are sold off
- D** Non-executive directors are appointed to the remuneration committee

12 Which of the following statements concerning profit are correct?

- 1 Accounting profit is not the same as economic profit
- 2 Profit takes account of risk
- 3 Accounting profit can be manipulated by managers

- A** 1 and 3 only
- B** 1 and 2 only
- C** 2 and 3 only
- D** 1, 2 and 3

13 A company has annual credit sales of \$27 million and related cost of sales of \$15 million. The company has the following targets for the next year:

| | |
|------------------------|---------|
| Trade receivables days | 50 days |
| Inventory days | 60 days |
| Trade payables | 45 days |

Assume there are 360 days in the year.

What is the net investment in working capital required for the next year?

- A** \$8,125,000
- B** \$4,375,000
- C** \$2,875,000
- D** \$6,375,000

14 An investor believes that they can make abnormal returns by studying past share price movements.

In terms of capital market efficiency, to which of the following does the investor's belief relate?

- A** Fundamental analysis
- B** Operational efficiency
- C** Technical analysis
- D** Semi-strong form efficiency

15 Which of the following statements is/are correct?

- 1 An increase in the cost of equity leads to a fall in share price
- 2 Investors faced with increased risk will expect increased return as compensation
- 3 The cost of debt is usually lower than the cost of preference shares

- A** 2 only
B 1 and 3 only
C 2 and 3 only
D 1, 2 and 3

16 Governments have a number of economic targets as part of their fiscal policy.

Which of the following government actions relate predominantly to fiscal policy?

- 1 Decreasing interest rates in order to stimulate consumer spending
- 2 Reducing taxation while maintaining public spending
- 3 Using official foreign currency reserves to buy the domestic currency
- 4 Borrowing money from the capital markets and spending it on public works

- A** 1 only
B 1 and 3
C 2 and 4 only
D 2, 3 and 4

17 The following are extracts from the statement of financial position of a company:

| | \$000 | \$000 |
|------------------------------|--------|--------------------|
| Equity | | |
| Ordinary shares | 8,000 | |
| Reserves | 20,000 | |
| | <hr/> | 28,000 |
| Non-current liabilities | | |
| Bonds | 4,000 | |
| Bank loans | 6,200 | |
| Preference shares | 2,000 | |
| | <hr/> | 12,200 |
| Current liabilities | | |
| Overdraft | 1,000 | |
| Trade payables | 1,500 | |
| | <hr/> | 2,500 |
| Total equity and liabilities | | <hr/> <hr/> 42,700 |

The ordinary shares have a nominal value of 50 cents per share and are trading at \$5.00 per share. The preference shares have a nominal value of \$1.00 per share and are trading at 80 cents per share. The bonds have a nominal value of \$100 and are trading at \$105 per bond.

What is the market value based gearing of the company, defined as prior charge capital/equity?

- A** 15.0%
B 13.0%
C 11.8%
D 7.3%

18 Which of the following statements is correct?

- A** Governments may choose to raise interest rates so that the level of general expenditure in the economy will increase
- B** The normal yield curve slopes upward to reflect increasing compensation to investors for being unable to use their cash now
- C** The yield on long-term loan notes is lower than the yield on short-term loan notes because long-term debt is less risky for a company than short-term debt
- D** Expectations theory states that future interest rates reflect expectations of future inflation rate movements

19 A company has just paid an ordinary share dividend of 32.0 cents and is expected to pay a dividend of 33.6 cents in one year's time. The company has a cost of equity of 13%.

What is the market price of the company's shares to the nearest cent on an ex dividend basis?

- A** \$3.20
- B** \$4.41
- C** \$2.59
- D** \$4.20

20 Which of the following is/are usually seen as forms of market failure where regulation may be a solution?

- 1 Imperfect competition
- 2 Social costs or externalities
- 3 Imperfect information

- A** 1 only
- B** 1 and 2 only
- C** 2 and 3 only
- D** 1, 2 and 3

(40 marks)

Section B – ALL FIVE questions are compulsory and MUST be attempted

- 1 Flit Co is preparing a cash flow forecast for the three-month period from January to the end of March. The following sales volumes have been forecast:

| | December | January | February | March | April |
|---------------|----------|---------|----------|-------|-------|
| Sales (units) | 1,200 | 1,250 | 1,300 | 1,400 | 1,500 |

Notes:

1. The selling price per unit is \$800 and a selling price increase of 5% will occur in February. Sales are all on one month's credit.
2. Production of goods for sale takes place one month before sales.
3. Each unit produced requires two units of raw materials, costing \$200 per unit. No raw materials inventory is held. Raw material purchases are on one months' credit.
4. Variable overheads and wages equal to \$100 per unit are incurred during production, and paid in the month of production.
5. The opening cash balance at 1 January is expected to be \$40,000.
6. A long-term loan of \$300,000 will be received at the beginning of March.
7. A machine costing \$400,000 will be purchased for cash in March.

Required:

- (a) Calculate the cash balance at the end of each month in the three-month period. (5 marks)
- (b) Calculate the forecast current ratio at the end of the three-month period. (2 marks)
- (c) Assuming that Flit Co expects to have a short-term cash surplus during the three-month period, discuss whether this should be invested in shares listed on a large stock market. (3 marks)

(10 marks)

2 Recent information on the earnings per share and share price of Par Co is as follows:

| Year | 2011 | 2012 | 2013 | 2014 |
|----------------------------|------|------|-------|-------|
| Earnings per share (cents) | 64 | 68 | 70 | 62 |
| Year-end share price (\$) | 9.15 | 9.88 | 10.49 | 10.90 |

Par Co currently has the following long-term capital structure:

| | \$m | \$m |
|------------------------------|------|-------|
| Equity finance | | |
| Ordinary shares | 30.0 | |
| Reserves | 38.4 | 68.4 |
| Non-current liabilities | | |
| Bank loans | 15.0 | |
| 8% convertible loan notes | 40.0 | 55.0 |
| Total equity and liabilities | | 123.4 |

The 8% loan notes are convertible into eight ordinary shares per loan note in seven years' time. If not converted, the loan notes can be redeemed on the same future date at their nominal value of \$100. Par Co has a cost of debt of 9% per year.

The ordinary shares of Par Co have a nominal value of \$1 per share and have been traded on a large stock exchange for many years. Listed companies similar to Par Co have been recently reported to have an average price/earnings ratio of 12 times.

Required:

- (a) Calculate the market price of the convertible loan notes of Par Co, commenting on whether conversion is likely. (5 marks)
- (b) Calculate the share price of Par Co using the price/earnings ratio method and discuss the problems in using this method of valuing the shares of a company. (5 marks)

(10 marks)

3 PZK Co, whose home currency is the dollar, trades regularly with customers in a number of different countries. The company expects to receive €1,200,000 in six months' time from a foreign customer. Current exchange rates in the home country of PZK Co are as follows:

| | |
|-------------------------------------|----------------------------|
| Spot exchange rate: | 4.1780–4.2080 euros per \$ |
| Six-month forward exchange rate: | 4.2302–4.2606 euros per \$ |
| Twelve-month forward exchange rate: | 4.2825–4.3132 euros per \$ |

Required:

- (a) Calculate the loss or gain compared to its current dollar value which PZK Co will incur by taking out a forward exchange contract on the future euro receipt, and explain why taking out a forward exchange contract may be preferred by PZK Co to not hedging the future euro receipt. (4 marks)
- (b) If the interest rate in the home country of PZK Co is 4% per year, calculate the annual interest rate in the foreign customer's country implied by the spot exchange rate and the twelve-month forward exchange rate. (2 marks)
- (c) Discuss whether PZK Co should avoid exchange rate risk by invoicing foreign customers in dollars. (4 marks)

(10 marks)

- 4 Uftin Co is a large company which is listed on a major stock market. The company has been evaluating an investment proposal to manufacture Product K3J. The initial investment of \$1,800,000 will be payable at the start of the first year of operation. The following draft evaluation has been prepared by a junior employee.

| Year | 1 | 2 | 3 | 4 |
|--------------------------|--------|---------|---------|---------|
| Sales (units/year) | 95,000 | 100,000 | 150,000 | 150,000 |
| Selling price (\$/unit) | 25 | 25 | 26 | 27 |
| Variable costs (\$/unit) | 11 | 12 | 12 | 13 |

(Note: The above selling prices and variable costs per unit have not been inflated.)

| | \$000 | \$000 | \$000 | \$000 |
|-------------------------------|---------|---------|---------|---------|
| Sales revenue | 2,475 | 2,605 | 4,064 | 4,220 |
| Variable costs | (1,097) | (1,260) | (1,890) | (2,048) |
| Fixed costs | (155) | (155) | (155) | (155) |
| Interest payments | (150) | (150) | (150) | (150) |
| Cash flow before tax | 1,073 | 1,040 | 1,869 | 1,867 |
| Tax allowable depreciation | (450) | (450) | (450) | (450) |
| Taxable profit | 623 | 590 | 1,419 | 1,417 |
| Taxation | | (137) | (130) | (312) |
| Net cash flow | 623 | 453 | 1,289 | 1,105 |
| Discount at 12% | 0.893 | 0.797 | 0.712 | 0.636 |
| Present values | 556 | 361 | 918 | 703 |
| | \$000 | | | |
| Present value of cash inflows | 2,538 | | | |
| Cost of machine | (1,800) | | | |
| NPV | 738 | | | |

The junior employee also provided the following information:

1. Relevant fixed costs are forecast to be \$150,000 per year.
2. Sales and production volumes are the same and no finished goods inventory is held.
3. The corporation tax rate is 22% per year and tax liabilities are payable one year in arrears.
4. Uftin Co can claim tax allowable depreciation of 25% per year on a reducing balance basis on the initial investment.
5. A balancing charge or allowance can be claimed at the end of the fourth year.
6. It is expected that selling price inflation will be 4.2% per year, variable cost inflation will be 5% per year and fixed cost inflation will be 3% per year.
7. The investment has no scrap value.
8. The investment will be partly financed by a \$1,500,000 loan at 10% per year.
9. Uftin Co has a weighted average cost of capital of 12% per year.

Required:

- (a) Prepare a revised draft evaluation of the investment proposal and comment on its financial acceptability. (11 marks)
- (b) Explain any TWO revisions you have made to the draft evaluation in part (a) above. (4 marks)
- (15 marks)**

- 5 Tinep Co is planning to raise funds for an expansion of existing business activities and in preparation for this the company has decided to calculate its weighted average cost of capital. Tinep Co has the following capital structure:

| | \$m | \$m |
|-------------------------|-------|-------|
| Equity | | |
| Ordinary shares | 200 | |
| Reserves | 650 | |
| | <hr/> | |
| | | 850 |
| Non-current liabilities | | |
| Loan notes | | 200 |
| | | <hr/> |
| | | 1,050 |
| | | <hr/> |

The ordinary shares of Tinep Co have a nominal value of 50 cents per share and are currently trading on the stock market on an ex dividend basis at \$5.85 per share. Tinep Co has an equity beta of 1.15.

The loan notes have a nominal value of \$100 and are currently trading on the stock market on an ex interest basis at \$103.50 per loan note. The interest on the loan notes is 6% per year before tax and they will be redeemed in six years' time at a 6% premium to their nominal value.

The risk-free rate of return is 4% per year and the equity risk premium is 6% per year. Tinep Co pays corporation tax at an annual rate of 25% per year.

Required:

- (a) Calculate the market value weighted average cost of capital and the book value weighted average cost of capital of Tinep Co, and comment briefly on any difference between the two values. (9 marks)
- (b) Discuss the factors to be considered by Tinep Co in choosing to raise funds via a rights issue. (6 marks)

(15 marks)

Formulae Sheet

Economic order quantity

$$= \sqrt{\frac{2C_0D}{C_h}}$$

Miller–Orr Model

$$\text{Return point} = \text{Lower limit} + \left(\frac{1}{3} \times \text{spread}\right)$$

$$\text{Spread} = 3 \left[\frac{\frac{3}{4} \times \text{transaction cost} \times \text{variance of cash flows}}{\text{interest rate}} \right]^{\frac{1}{3}}$$

The Capital Asset Pricing Model

$$E(r_i) = R_f + \beta_i (E(r_m) - R_f)$$

The asset beta formula

$$\beta_a = \left[\frac{V_e}{(V_e + V_d(1-T))} \beta_e \right] + \left[\frac{V_d(1-T)}{(V_e + V_d(1-T))} \beta_d \right]$$

The Growth Model

$$P_0 = \frac{D_0(1+g)}{(r_e - g)}$$

Gordon's growth approximation

$$g = br_e$$

The weighted average cost of capital

$$\text{WACC} = \left[\frac{V_e}{V_e + V_d} \right] k_e + \left[\frac{V_d}{V_e + V_d} \right] k_d (1-T)$$

The Fisher formula

$$(1+i) = (1+r)(1+h)$$

Purchasing power parity and interest rate parity

$$S_1 = S_0 \times \frac{(1+h_c)}{(1+h_b)} \quad F_0 = S_0 \times \frac{(1+i_c)}{(1+i_b)}$$

Present Value Table

Present value of 1 i.e. $(1 + r)^{-n}$

Where r = discount rate
 n = number of periods until payment

| <i>Discount rate (r)</i> | | | | | | | | | | | |
|--------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----|
| <i>Periods</i> | | | | | | | | | | | |
| (n) | 1% | 2% | 3% | 4% | 5% | 6% | 7% | 8% | 9% | 10% | |
| 1 | 0.990 | 0.980 | 0.971 | 0.962 | 0.952 | 0.943 | 0.935 | 0.926 | 0.917 | 0.909 | 1 |
| 2 | 0.980 | 0.961 | 0.943 | 0.925 | 0.907 | 0.890 | 0.873 | 0.857 | 0.842 | 0.826 | 2 |
| 3 | 0.971 | 0.942 | 0.915 | 0.889 | 0.864 | 0.840 | 0.816 | 0.794 | 0.772 | 0.751 | 3 |
| 4 | 0.961 | 0.924 | 0.888 | 0.855 | 0.823 | 0.792 | 0.763 | 0.735 | 0.708 | 0.683 | 4 |
| 5 | 0.951 | 0.906 | 0.863 | 0.822 | 0.784 | 0.747 | 0.713 | 0.681 | 0.650 | 0.621 | 5 |
| 6 | 0.942 | 0.888 | 0.837 | 0.790 | 0.746 | 0.705 | 0.666 | 0.630 | 0.596 | 0.564 | 6 |
| 7 | 0.933 | 0.871 | 0.813 | 0.760 | 0.711 | 0.665 | 0.623 | 0.583 | 0.547 | 0.513 | 7 |
| 8 | 0.923 | 0.853 | 0.789 | 0.731 | 0.677 | 0.627 | 0.582 | 0.540 | 0.502 | 0.467 | 8 |
| 9 | 0.914 | 0.837 | 0.766 | 0.703 | 0.645 | 0.592 | 0.544 | 0.500 | 0.460 | 0.424 | 9 |
| 10 | 0.905 | 0.820 | 0.744 | 0.676 | 0.614 | 0.558 | 0.508 | 0.463 | 0.422 | 0.386 | 10 |
| 11 | 0.896 | 0.804 | 0.722 | 0.650 | 0.585 | 0.527 | 0.475 | 0.429 | 0.388 | 0.350 | 11 |
| 12 | 0.887 | 0.788 | 0.701 | 0.625 | 0.557 | 0.497 | 0.444 | 0.397 | 0.356 | 0.319 | 12 |
| 13 | 0.879 | 0.773 | 0.681 | 0.601 | 0.530 | 0.469 | 0.415 | 0.368 | 0.326 | 0.290 | 13 |
| 14 | 0.870 | 0.758 | 0.661 | 0.577 | 0.505 | 0.442 | 0.388 | 0.340 | 0.299 | 0.263 | 14 |
| 15 | 0.861 | 0.743 | 0.642 | 0.555 | 0.481 | 0.417 | 0.362 | 0.315 | 0.275 | 0.239 | 15 |
| | | | | | | | | | | | |
| (n) | 11% | 12% | 13% | 14% | 15% | 16% | 17% | 18% | 19% | 20% | |
| 1 | 0.901 | 0.893 | 0.885 | 0.877 | 0.870 | 0.862 | 0.855 | 0.847 | 0.840 | 0.833 | 1 |
| 2 | 0.812 | 0.797 | 0.783 | 0.769 | 0.756 | 0.743 | 0.731 | 0.718 | 0.706 | 0.694 | 2 |
| 3 | 0.731 | 0.712 | 0.693 | 0.675 | 0.658 | 0.641 | 0.624 | 0.609 | 0.593 | 0.579 | 3 |
| 4 | 0.659 | 0.636 | 0.613 | 0.592 | 0.572 | 0.552 | 0.534 | 0.516 | 0.499 | 0.482 | 4 |
| 5 | 0.593 | 0.567 | 0.543 | 0.519 | 0.497 | 0.476 | 0.456 | 0.437 | 0.419 | 0.402 | 5 |
| 6 | 0.535 | 0.507 | 0.480 | 0.456 | 0.432 | 0.410 | 0.390 | 0.370 | 0.352 | 0.335 | 6 |
| 7 | 0.482 | 0.452 | 0.425 | 0.400 | 0.376 | 0.354 | 0.333 | 0.314 | 0.296 | 0.279 | 7 |
| 8 | 0.434 | 0.404 | 0.376 | 0.351 | 0.327 | 0.305 | 0.285 | 0.266 | 0.249 | 0.233 | 8 |
| 9 | 0.391 | 0.361 | 0.333 | 0.308 | 0.284 | 0.263 | 0.243 | 0.225 | 0.209 | 0.194 | 9 |
| 10 | 0.352 | 0.322 | 0.295 | 0.270 | 0.247 | 0.227 | 0.208 | 0.191 | 0.176 | 0.162 | 10 |
| 11 | 0.317 | 0.287 | 0.261 | 0.237 | 0.215 | 0.195 | 0.178 | 0.162 | 0.148 | 0.135 | 11 |
| 12 | 0.286 | 0.257 | 0.231 | 0.208 | 0.187 | 0.168 | 0.152 | 0.137 | 0.124 | 0.112 | 12 |
| 13 | 0.258 | 0.229 | 0.204 | 0.182 | 0.163 | 0.145 | 0.130 | 0.116 | 0.104 | 0.093 | 13 |
| 14 | 0.232 | 0.205 | 0.181 | 0.160 | 0.141 | 0.125 | 0.111 | 0.099 | 0.088 | 0.078 | 14 |
| 15 | 0.209 | 0.183 | 0.160 | 0.140 | 0.123 | 0.108 | 0.095 | 0.084 | 0.074 | 0.065 | 15 |

Annuity Table

Present value of an annuity of 1 i.e. $\frac{1 - (1 + r)^{-n}}{r}$

Where r = discount rate
 n = number of periods

| | | <i>Discount rate (r)</i> | | | | | | | | | |
|----------------|------------|--------------------------|------------|------------|------------|------------|------------|------------|------------|------------|----|
| <i>Periods</i> | | | | | | | | | | | |
| (n) | 1% | 2% | 3% | 4% | 5% | 6% | 7% | 8% | 9% | 10% | |
| 1 | 0.990 | 0.980 | 0.971 | 0.962 | 0.952 | 0.943 | 0.935 | 0.926 | 0.917 | 0.909 | 1 |
| 2 | 1.970 | 1.942 | 1.913 | 1.886 | 1.859 | 1.833 | 1.808 | 1.783 | 1.759 | 1.736 | 2 |
| 3 | 2.941 | 2.884 | 2.829 | 2.775 | 2.723 | 2.673 | 2.624 | 2.577 | 2.531 | 2.487 | 3 |
| 4 | 3.902 | 3.808 | 3.717 | 3.630 | 3.546 | 3.465 | 3.387 | 3.312 | 3.240 | 3.170 | 4 |
| 5 | 4.853 | 4.713 | 4.580 | 4.452 | 4.329 | 4.212 | 4.100 | 3.993 | 3.890 | 3.791 | 5 |
| 6 | 5.795 | 5.601 | 5.417 | 5.242 | 5.076 | 4.917 | 4.767 | 4.623 | 4.486 | 4.355 | 6 |
| 7 | 6.728 | 6.472 | 6.230 | 6.002 | 5.786 | 5.582 | 5.389 | 5.206 | 5.033 | 4.868 | 7 |
| 8 | 7.652 | 7.325 | 7.020 | 6.733 | 6.463 | 6.210 | 5.971 | 5.747 | 5.535 | 5.335 | 8 |
| 9 | 8.566 | 8.162 | 7.786 | 7.435 | 7.108 | 6.802 | 6.515 | 6.247 | 5.995 | 5.759 | 9 |
| 10 | 9.471 | 8.983 | 8.530 | 8.111 | 7.722 | 7.360 | 7.024 | 6.710 | 6.418 | 6.145 | 10 |
| 11 | 10.368 | 9.787 | 9.253 | 8.760 | 8.306 | 7.887 | 7.499 | 7.139 | 6.805 | 6.495 | 11 |
| 12 | 11.255 | 10.575 | 9.954 | 9.385 | 8.863 | 8.384 | 7.943 | 7.536 | 7.161 | 6.814 | 12 |
| 13 | 12.134 | 11.348 | 10.635 | 9.986 | 9.394 | 8.853 | 8.358 | 7.904 | 7.487 | 7.103 | 13 |
| 14 | 13.004 | 12.106 | 11.296 | 10.563 | 9.899 | 9.295 | 8.745 | 8.244 | 7.786 | 7.367 | 14 |
| 15 | 13.865 | 12.849 | 11.938 | 11.118 | 10.380 | 9.712 | 9.108 | 8.559 | 8.061 | 7.606 | 15 |
| (n) | 11% | 12% | 13% | 14% | 15% | 16% | 17% | 18% | 19% | 20% | |
| 1 | 0.901 | 0.893 | 0.885 | 0.877 | 0.870 | 0.862 | 0.855 | 0.847 | 0.840 | 0.833 | 1 |
| 2 | 1.713 | 1.690 | 1.668 | 1.647 | 1.626 | 1.605 | 1.585 | 1.566 | 1.547 | 1.528 | 2 |
| 3 | 2.444 | 2.402 | 2.361 | 2.322 | 2.283 | 2.246 | 2.210 | 2.174 | 2.140 | 2.106 | 3 |
| 4 | 3.102 | 3.037 | 2.974 | 2.914 | 2.855 | 2.798 | 2.743 | 2.690 | 2.639 | 2.589 | 4 |
| 5 | 3.696 | 3.605 | 3.517 | 3.433 | 3.352 | 3.274 | 3.199 | 3.127 | 3.058 | 2.991 | 5 |
| 6 | 4.231 | 4.111 | 3.998 | 3.889 | 3.784 | 3.685 | 3.589 | 3.498 | 3.410 | 3.326 | 6 |
| 7 | 4.712 | 4.564 | 4.423 | 4.288 | 4.160 | 4.039 | 3.922 | 3.812 | 3.706 | 3.605 | 7 |
| 8 | 5.146 | 4.968 | 4.799 | 4.639 | 4.487 | 4.344 | 4.207 | 4.078 | 3.954 | 3.837 | 8 |
| 9 | 5.537 | 5.328 | 5.132 | 4.946 | 4.772 | 4.607 | 4.451 | 4.303 | 4.163 | 4.031 | 9 |
| 10 | 5.889 | 5.650 | 5.426 | 5.216 | 5.019 | 4.833 | 4.659 | 4.494 | 4.339 | 4.192 | 10 |
| 11 | 6.207 | 5.938 | 5.687 | 5.453 | 5.234 | 5.029 | 4.836 | 4.656 | 4.486 | 4.327 | 11 |
| 12 | 6.492 | 6.194 | 5.918 | 5.660 | 5.421 | 5.197 | 4.988 | 4.793 | 4.611 | 4.439 | 12 |
| 13 | 6.750 | 6.424 | 6.122 | 5.842 | 5.583 | 5.342 | 5.118 | 4.910 | 4.715 | 4.533 | 13 |
| 14 | 6.982 | 6.628 | 6.302 | 6.002 | 5.724 | 5.468 | 5.229 | 5.008 | 4.802 | 4.611 | 14 |
| 15 | 7.191 | 6.811 | 6.462 | 6.142 | 5.847 | 5.575 | 5.324 | 5.092 | 4.876 | 4.675 | 15 |

End of Question Paper