# KASNEB

## ATD LEVEL II

## FUNDAMENTALS OF FINANCE

**TUESDAY: 22 November 2016.**             **Time Allowed: 3 hours.**

Answer ALL questions. Marks allocated to each question are shown at the end of the question. Show ALL your workings.

### QUESTION ONE

(a)    Summarise two differences between "accounting" and "finance".      (4 marks)

(b)    Discuss four ways in which the goals of a business organisation might complement each other.      (8 marks)

(c)    Joel borrowed a 3-year loan of Sh.1,500,000 at an interest rate of 9 per cent per annum from his employer to buy a saloon car. His employer required a three equal end-of-year repayments.

     **Required:**

     (i)    Annual instalment to be paid by Joel at the end of each year.      (1 mark)

     (ii)    Loan armotisation schedule.      (3 marks)

(d)    John Mativo promised to give his son Sh.1,000,000 in cash on his 25th birthday. Today is his son's 16th birthday.

     **Required:**

     (i)    John Mativo intends to make annual payments into a fund after one year. Determine the annual payments, given that the fund would pay interest at the rate of 8 per cent per annum.      (2 marks)

     (ii)    If he decides to invest a lumpsum in the account after one year and let it compound annually, compute the lumpsum.      (2 marks)

                                                   **(Total: 20 marks)**

### QUESTION TWO

(a)    Explain three reasons why a company might decide to issue bonus shares instead of paying cash dividends.    (6 marks)

(b)    Bright Ltd. is considering a new product line to supplement its current product line. It is anticipated that the new product line will involve an initial cash investment of Sh.1,400,000 at the beginning and Sh.2,000,000 in year 1. After tax cash inflows are expected as follows: Sh.500,000 in year 2, Sh.600,000 in year 3, Sh.700,000 in year 4 and Sh.800,000 each year thereafter through year 10. Though the product line might be viable after year 10, the company prefers to be conservative and end all projections at that time. The company's cost of capital is 15%.

     **Required:**
     Advise Bright Ltd. on whether to invest in the new product line using each of the following investment evaluation criteria:

     (i)    Net present value (NPV).      (5 marks)

     (ii)    Internal rate of return (IRR).      (6 marks)

     (iii)    Pay back period (PBP).      (3 marks)

                                                   **(Total: 20 marks)**

### QUESTION THREE

(a)    In relation to Islamic finance, explain the following concepts:

     (i)    Hibah.      (2 marks)

     (ii)    Ijarah.      (2 marks)

(b)    Describe two factors that might have contributed to the growth of financial innovation in your country.    (4 marks)

(c)    Wema Ltd. intends to expand its business operations. On 31 October 2016, the company had the following existing and proposed capital structure to support the expansion programme:

     1.    The existing 9% debentures had a book value of Sh.2,000,000 and a market value of Sh.1,800,000.

2.  A 12% preference share capital stands in the books at Sh.4,000,000 (20,000 shares) and has a total market value of Sh.5,000,000.

3.  There are 100,000 ordinary shares with a current market price of Sh.80 each. The dividend for the year ended 31 October 2016 is expected to be Sh.2.40 per share, and a growth rate of 8% each year for the foreseeable future.

4.  The company plans to issue 50,000 ordinary shares at a market price of Sh.80 per share. The cost of floating the shares is estimated at Sh.100,000.

5.  A six year loan of Sh.4,500,000 is to be raised at an interest rate of 10% per annum. A cost of Sh.150,000 will be incurred in raising this loan.

(Ignore taxation).

**Required:**

(i)    Current weighted average cost of capital (WACC) for Wema Ltd. using market values.    (6 marks)

(ii)   Expected weighted average cost of capital (WACC) for Wema Ltd. after the expansion programme.
(6 marks)
**(Total: 20 marks)**

## QUESTION FOUR

(a)    Outline four functions of a cash budget.    (4 marks)

(b)    Highlight six demerits of using ordinary share capital in financing a company's operation.    (6 marks)

(c)    The following information was extracted from the financial statements of Flight Company Ltd. for the years ended 31 October 2015 and 2016:

|  | 2015 Sh. "000" | 2016 Sh. "000" |
|---|---|---|
| Finished goods | 24,000 | 27,000 |
| Work-in-progress | 15,000 | 18,000 |
| Stocks-Raw materials | 21,000 | 24,000 |
| Purchases | 120,000 | 150,000 |
| Cost of goods sold | 180,000 | 236,000 |
| Sales | 324,000 | 372,000 |
| Debtors | 45,000 | 54,000 |
| Creditors | 27,000 | 36,000 |

**(Assume a 365-day year).**

**Required:**
The operating cycle period for each of the two years.
(10 marks)
**(Total: 20 marks)**

## QUESTION FIVE

(a)    Describe four advantages of establishing a central depository system (CDS).    (8 marks)

(b)    In the context of risk and investment, explain the following terms:

(i)    Risk-free return.    (2 marks)

(ii)   Expected rate of return.    (2 marks)

(iii)  Average rate of return.    (2 marks)

(c)    The following data relates to share Y returns and the corresponding probabilities under different economic conditions:

| Economic condition | Share Y Rate of return (%) | Probability |
|---|---|---|
| Growth | 18.5 | 0.20 |
| Expansion | 16.5 | 0.40 |
| Stagnation | 10.0 | 0.25 |
| Decline | -8.0 | 0.15 |

**Required:**

(i)    The expected rate of return for share Y.    (2 marks)

(ii)   The standard deviation of return for share Y.    (4 marks)
**(Total: 20 marks)**

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## Present Value of 1 Received at the End of n Periods:

$$PVIF_{r,n} = 1/(1+r)^n = (1+r)^{-n}$$

| Period | 1% | 2% | 3% | 4% | 5% | 6% | 7% | 8% | 9% | 10% | 12% | 14% | 15% | 16% | 18% | 20% | 24% | 28% | 32% | 36% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .9901 | .9804 | .9709 | .9615 | .9524 | .9434 | .9346 | .9259 | .9174 | .9091 | .8929 | 8772 | .8696 | .8621 | .8475 | .8333 | .8065 | .7813 | .7576 | .7353 |
| 2 | .9803 | .9612 | .9426 | .9246 | .9070 | .8900 | .8734 | .8573 | .8417 | .8264 | .7972 | .7695 | .7561 | .7432 | .7182 | .6944 | .6504 | .6104 | 5739 | .5407 |
| 3 | .9706 | .9423 | .9151 | .8890 | .8638 | .8396 | .8163 | .7938 | .7722 | .7513 | .7118 | .6750 | .6575 | .6407 | .6086 | .5787 | .5245 | .4768 | .4348 | 3975 |
| 4 | .9610 | .9238 | .8885 | .8548 | .8227 | .7921 | .7629 | .7350 | .7084 | .6830 | .6355 | 5921 | .5718 | .5523 | .5158 | .4823 | .4230 | .3725 | .3294 | 2923 |
| 5 | .9515 | .9057 | .8626 | .8219 | .7835 | .7473 | .7130 | .6806 | .6499 | .6209 | .5674 | 5194 | .4972 | .4761 | .4371 | .4019 | .3411 | .2910 | .2495 | .2149 |
| 6 | .9420 | .8880 | .8375 | .7903 | .7462 | .7050 | .6663 | .6302 | .5963 | .5645 | .5066 | .4556 | .4323 | .4104 | .3704 | .3349 | .2751 | .2274 | .1890 | .1580 |
| 7 | .9327 | .8706 | .8131 | .7599 | .7107 | .6651 | .6227 | .5835 | .5470 | .5132 | .4523 | .3996 | .3759 | .3538 | .3139 | .2791 | .2218 | :1776 | .1432 | .1162 |
| 8 | .9235 | .8535 | .7894 | .7307 | .6768 | .6274 | .5820 | .5403 | .5019 | .4665 | .4039 | .3506 | .3269 | .3050 | .2660 | .2326 | .1789 | .1388 | .1085 | .0854 |
| 9 | .9143 | .8368 | .7664 | .7026 | .6446 | .5919 | .5439 | .5002 | .4604 | .4241 | .3606 | 3075 | .2843 | .2630 | .2255 | .1938 | .1443 | .1084 | .0822 | .0628 |
| 10 | .9053 | .8203 | .7441 | .6756 | .6139 | .5584 | .5083 | .4632 | .4224 | .3855 | .3220 | .2697 | .2472 | .2267 | .1911 | .1615 | .1164 | .0847 | .0623 | .0462 |
| 11 | .8963 | .8043 | .7224 | .6496 | .5847 | .5268 | .4751 | .4289 | .3875 | .3505 | .2875 | .2366 | .2149 | .1954 | .1619 | .1346 | .0938 | .0662 | .0472 | .0340 |
| 12 | .8874 | .7885 | .7014 | .6246 | .5568 | .4970 | .4440 | .3971 | .3555 | .3186 | .2567 | .2076 | .1869 | 1685 | .1372 | .1122 | .0757 | .0517 | .0357 | .0250 |
| 13 | .8787 | .7730 | .6810 | .6006 | .5303 | .4688 | .4150 | .3677 | .3262 | .2897 | .2292 | .1821 | .1625 | .1452 | .1163 | .0935 | .0610 | .0404 | .0271 | .0184 |
| 14 | .8700 | .7579 | .6611 | .5775 | .5051 | .4423 | .3878 | .3405 | .2992 | .2633 | .2046 | .1597 | .1413 | .1252 | .0985 | .0779 | .0492 | .0316 | .0205 | .0135 |
| 15 | .8613 | .7430 | .6419 | .5553 | .4810 | .4173 | .3624 | 3152 | .2745 | .2394 | .1827 | 1401 | .1229 | .1079 | .0835 | .0649 | .0397 | .0247 | .0155 | 0099 |
| 16 | .8528 | .7284 | .6232 | .5339 | .4581 | .3936 | .3387 | .2919 | .2519 | .2176 | .1631 | .1229 | 1069 | .0930 | .0708 | .0541 | .0320 | .0193 | .0118 | 0073 |
| 17 | .8444 | .7142 | .6050 | .5134 | .4363 | .3714 | .3166 | .2703 | .2311 | .1978 | .1456 | .1078 | .0929 | .0802 | .0600 | .0451 | .0258 | .0150 | .0089 | 0054 |
| 18 | .8360 | .7002 | .5874 | .4936 | .4155 | .3503 | .2959 | .2502 | .2120 | .1799 | .1300 | .0946 | .0808 | .0691 | .0508 | .0376 | .0208 | .0118 | .0068 | .0039 |
| 19 | .8277 | .6864 | .5703 | .4746 | .3957 | .3305 | .2765 | .2317 | .1945 | .1635 | .1161 | .0829 | .0703 | .0596 | .0431 | .0313 | .0168 | .0092 | .0051 | .0029 |
| 20 | .8195 | .6730 | .5537 | .4564 | .3769 | .3118 | .2584 | .2145 | .1784 | 1486 | 1037 | .0728 | .0611 | .0514 | .0365 | .0261 | .0135 | .0072 | .0039 | .0021 |
| 25 | .7798 | .6095 | .4776 | .3751 | .2953 | .2330 | .1842 | .1460 | .1160 | .0923 | .0588 | .0378 | .0304 | .0245 | .0160 | .0105 | .0046 | .0021 | .0010 | 0005 |
| 30 | .7419 | .5521 | .4120 | .3083 | .2314 | .1741 | .1314 | .0994 | .0754 | .0573 | .0334 | .0196 | .0151 | .0116 | .0070 | .0042 | .0016 | .0006 | .0002 | .0001 |
| 40 | .6717 | .4529 | .3066 | .2083 | .1420 | .0972 | .0668 | .0460 | .0318 | .0221 | .0107 | .0053 | .0037 | .0026 | .0013 | .0007 | .0002 | .0001 | | |
| 50 | .6080 | .3715 | .2281 | .1407 | .0872 | .0543 | .0339 | .0213 | .0134 | .0085 | .0035 | .0014 | .0009 | .0006 | .0003 | .0001 | | | | |
| 60 | .5504 | .3048 | .1697 | .0951 | .0535 | .0303 | .0173 | .0099 | .0057 | .0033 | .0011 | .0004 | .0002 | .0001 | | | | | | |

\* The factor is zero to four decimal places

## Present Value of an Annuity of 1 Per Period for n Periods:

$$PVIF_{r,t} = \sum_{t=1}^{n} \frac{1}{(1+r)^t} = \frac{1 - \frac{1}{(1+r)^n}}{r}$$

| number of payments | 1% | 2% | 3% | 4% | 5% | 6% | 7% | 8% | 9% | 10% | 12% | 14% | 15% | 16% | 18% | 20% | 24% | 28% | 32% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.9901 | 0.9804 | 0.9709 | 0.9615 | 0.9524 | 0.9434 | 0.9346 | 0.9259 | 0.9174 | 0.9091 | 0.8929 | 0.8772 | 0.8696 | 0.8621 | 0.8475 | 0.8333 | 0.8065 | 0.7813 | 0.7576 |
| 2 | 1.9704 | 1.9416 | 1.9135 | 1.8861 | 1.8594 | 1.8334 | 1.8080 | 1.7833 | 1.7591 | 1.7355 | 1.6901 | 1.6467 | 1.6257 | 1.6052 | 1.5656 | 1.5278 | 1.4568 | 1.3916 | 1.3315 |
| 3 | 2.9410 | 2.8839 | 2.8286 | 2.7751 | 2.7232 | 2.6730 | 2.6243 | 2.5771 | 2.5313 | 2.4869 | 2.4018 | 2.3216 | 2.2832 | 2.2459 | 2.1743 | 2.1065 | 1.9813 | 1.8684 | 1.7663 |
| 4 | 3.9020 | 3.8077 | 3.7171 | 3.6299 | 3.5460 | 3.4651 | 3.3872 | 3.3121 | 3.2397 | 3.1699 | 3.0373 | 2.9137 | 2.8550 | 2.7982 | 2.6901 | 2.5887 | 2.4043 | 2.2410 | 2.0957 |
| 5 | 4.8534 | 4.7135 | 4.5797 | 4.4518 | 4.3295 | 4.2124 | 4.1002 | 3.9927 | 3.8897 | 3.7908 | 3.6048 | 3.4331 | 3.3522 | 3.2743 | 3.1272 | 2.9906 | 2.7454 | 2.5320 | 2.3452 |
| 6 | 5.7955 | 5.6014 | 5.4172 | 5.2421 | 5.0757 | 4.9173 | 4.7665 | 4.6229 | 4.4859 | 4.3553 | 4.1114 | 3.8887 | 3.7845 | 3.6847 | 3.4976 | 3.3255 | 3.0205 | 2.7594 | 2.5342 |
| 7 | 6.7282 | 6.4720 | 6.2303 | 6.0021 | 5.7864 | 5.5824 | 5.3893 | 5.2064 | 5.0330 | 4.8684 | 4.5638 | 4.2883 | 4.1604 | 4.0386 | 3.8115 | 3.6046 | 3.2423 | 2.9370 | 2.6775 |
| 8 | 7.6517 | 7.3255 | 7.0197 | 6.7327 | 6.4632 | 6.2098 | 5.9713 | 5.7466 | 5.5348 | 5.3349 | 4.9676 | 4.6389 | 4.4873 | 4.3436 | 4.0776 | 3.8372 | 3.4212 | 3.0758 | 2.7860 |
| 9 | 8.5660 | 8.1622 | 7.7861 | 7.4353 | 7.1078 | 6.8017 | 6.5152 | 6.2469 | 5.9952 | 5.7590 | 5.3282 | 4.9464 | 4.7716 | 4.6065 | 4.3030 | 4.0310 | 3.5655 | 3.1842 | 2.8681 |
| 10 | 9.4713 | 8.9826 | 8.5302 | 8.1109 | 7.7217 | 7.3601 | 7.0236 | 6.7101 | 6.4177 | 6.1446 | 5.6502 | 5.2161 | 5.0188 | 4.8332 | 4.4941 | 4.1925 | 3.6819 | 3.2689 | 2.9304 |
| 11 | 10.3676 | 9.7868 | 9.2526 | 8.7605 | 8.3064 | 7.8869 | 7.4987 | 7.1390 | 6.8052 | 6.4951 | 5.9377 | 5.4527 | 5.2337 | 5.0286 | 4.6560 | 4.3271 | 3.7757 | 3.3351 | 2.9776 |
| 12 | 11.2551 | 10.5753 | 9.9540 | 9.3851 | 8.8633 | 8.3838 | 7.9427 | 7.5361 | 7.1607 | 6.8137 | 6.1944 | 5.6603 | 5.4206 | 5.1971 | 4.7932 | 4.4392 | 3.8514 | 3.3868 | 3.0133 |
| 13 | 12.1337 | 11.3484 | 10.6350 | 9.9856 | 9.3936 | 8.8527 | 8.3577 | 7.9038 | 7.4869 | 7.1034 | 6.4235 | 5.8424 | 5.5831 | 5.3423 | 4.9095 | 4.5327 | 3.9124 | 3.4272 | 3.0404 |
| 14 | 13.0037 | 12.1062 | 11.2961 | 10.5631 | 9.8986 | 9.2950 | 8.7455 | 8.2442 | 7.7862 | 7.3667 | 6.6282 | 6.0021 | 5.7245 | 5.4675 | 5.0081 | 4.6106 | 3.9616 | 3.4587 | 3.0609 |
| 15 | 13.8651 | 12.8493 | 11.9379 | 11.1184 | 10.3797 | 9.7122 | 9.1079 | 8.5595 | 8.0607 | 7.6061 | 6.8109 | 6.1422 | 5.8474 | 5.5755 | 5.0916 | 4.6755 | 4.0013 | 3.4834 | 3.0764 |
| 16 | 14.7179 | 13.5777 | 12.5611 | 11.6523 | 10.8378 | 10.1059 | 9.4466 | 8.8514 | 8.3126 | 7.8237 | 6.9740 | 6.2651 | 5.9542 | 5.6685 | 5.1624 | 4.7296 | 4.0333 | 3.5026 | 3.0882 |
| 17 | 15.5623 | 14.2919 | 13.1661 | 12.1657 | 11.2741 | 10.4773 | 9.7632 | 9.1216 | 8.5436 | 8.0216 | 7.1196 | 6.3729 | 6.0472 | 5.7487 | 5.2223 | 4.7746 | 4.0591 | 3.5177 | 3.0971 |
| 18 | 16.3983 | 14.9920 | 13.7535 | 12.6593 | 11.6896 | 10.8276 | 10.0591 | 9.3719 | 8.7556 | 8.2014 | 7.2497 | 6.4674 | 6.1280 | 5.8178 | 5.2732 | 4.8122 | 4.0799 | 3.5294 | 3.1039 |
| 19 | 17.2260 | 15.6785 | 14.3238 | 13.1339 | 12.0853 | 11.1581 | 10.3356 | 9.6036 | 8.9501 | 8.3649 | 7.3658 | 6.5504 | 6.1982 | 5.8775 | 5.3162 | 4.8435 | 4.0967 | 3.5386 | 3.1090 |
| 20 | 18.0456 | 16.3514 | 14.8775 | 13.5903 | 12.4622 | 11.4699 | 10.5940 | 9.8181 | 9.1285 | 8.5136 | 7.4694 | 6.6231 | 6.2593 | 5.9288 | 5.3527 | 4.8696 | 4.1103 | 3.5458 | 3.1129 |
| 25 | 22.0232 | 19.5235 | 17.4131 | 15.6221 | 14.0939 | 12.7834 | 11.6536 | 10.6748 | 9.8226 | 9.0770 | 7.8431 | 6.8729 | 6.4641 | 6.0971 | 5.4669 | 4.9476 | 4.1474 | 3.5640 | 3.1220 |
| 30 | 25.8077 | 22.3965 | 19.6004 | 17.2920 | 15.3725 | 13.7648 | 12.4090 | 11.2578 | 10.2737 | 9.4269 | 8.0552 | 7.0027 | 6.5660 | 6.1772 | 5.5168 | 4.9789 | 4.1601 | 3.5693 | 3.1242 |
| 40 | 32.8347 | 27.3555 | 23.1148 | 19.7928 | 17.1591 | 15.0463 | 13.3317 | 11.9246 | 10.7574 | 9.7791 | 8.2438 | 7.1050 | 6.6418 | 6.2335 | 5.5482 | 4.9966 | 4.1659 | 3.5712 | 3.1250 |
| 50 | 39.1961 | 31.4236 | 25.7298 | 21.4822 | 18.2559 | 15.7619 | 13.8007 | 12.2335 | 10.9617 | 9.9148 | 8.3045 | 7.1327 | 6.6605 | 6.2463 | 5.5541 | 4.9995 | 4.1666 | 3.5714 | 3.1250 |
| 60 | 44.9550 | 34.7609 | 27.6756 | 22.6235 | 18.9293 | 16.1614 | 14.0392 | 12.3766 | 11.0480 | 9.9672 | 8.3240 | 7.1401 | 6.6651 | 6.2402 | 5.5553 | 4.9999 | 4.1667 | 3.5714 | 3.1250 |