BINDURA UNIVERSITY OF SCIENCE EDUCATION

FACULTY OF COMMERCE

DEPARTMENT OF ECONOMICS

INVESTMENT ANALYSIS II: EC404

DURATION: 3 HOURS

INSTRUCTIONS TO CANDIDATES

1. This paper carries four (4) questions
2. Answer ALL questions
3. Each question carries **25 marks**
4. Show all your **workings** and **write legibly**
5. All rough work should be done inside the answer booklet

Question 1

Several investment analysts have argued that the increase in tax by the Ministry of Finance, Economic Development and Investment Promotion in its 2024 National Budget was ill-timed and could result in the overheating of the economy, as an investment analysist, critically analyse the potential implications of the increase in tax to both foreign and local investors. **[25 marks]**

Question 2

Shifting funds from the risky portfolio to the risk- free assets is the simplest way to reduce risk (Whitehurst, 2002, PP 200). Using investment knowledge, critically evaluate the above. **[25 marks]**

Question 3

Tarlenty has a $9000 of fully diversified portfolio. He subsequently inherits ABC Company common stock worth $100000 His financial adviser provided him with the following forecast information:

	Expected Monthly Returns	Standard Deviation of Monthly Returns
Original portfolio	067%	237%
ABC stock	125%	295%

The correlation coefficient of ABC stock returns with the original portfolio returns is 040

a) The inheritance changes Tarlenty's overall portfolio and he is deciding whether to keep the ABC stock Assuming Tarlenty keeps the ABC stock, calculate the

i) Expected return of his new portfolio which includes the ABC stock   **[2 marks]**

ii) Covariance of ABC stock returns with the original portfolio returns   **[3 marks**

iii) Standard deviation of his new portfolio, which includes the ABC stock   **[3 marks**

b) If Tarlenty sells the ABC stock, he will invest the proceeds in risk-free government securities yielding 042% monthly. Assuming Tarlenty sells the ABC, stock and replaces it with the government securities, calculate the

i) Expected return of his new portfolio, which includes the government securities.   **[2 marks]**

ii) Covariance of the government security returns with the original portfolio returns.   **[3 marks**

iii) Standard deviation of his new portfolio, which includes the government securities.   **[3 marks]**

c) Determine whether the systematic risk of his new portfolio, which includes the government securities, will be higher or lower than that of her original portfolio   **[3 marks)**

i) Calculate variance of the portfolio.   **[3 marks]**

ii) On the basis of conversations with her wife, Tarlenty is considering selling the $100 0000 of ABC stock and acquiring $100 000 of XYZ Company common stock instead XYZ stock has the same expected return and standard deviation as ABC stock His wife comments, "It doesn't matter whether you keep all of the ABC stock or replace it with $100,000 of XYZ stock" State whether her husband's comment is correct or incorrect Justify your response.   **[3 marks]**

Question 4

a) Use the following information to answer the questions that follow

Current stock price = $1362, Strike price = $15, Time to maturity = 02822, Standard deviation of price = 081 and Risk-free rate of return = 463%

Using the Black- Scholes formula, calculate

i) The values of d_1 and d_2 and their respective cumulative probabilities   **[3 marks]**

ii) Values of a European call option with these characteristics   **[2 marks]**

b). The life cycle approach to the management of an individual's investment portfolio views the individual as passing through a series of stages, becoming more risk averse in later years (Whitehurst, 2002: pp 200). Using your investment knowledge, discuss the rational underling this approach.   **[20 marks]**

END

TABLE 3   Normal Curve Areas

$$\text{Area} = P(0 \leq z \leq z_0)$$
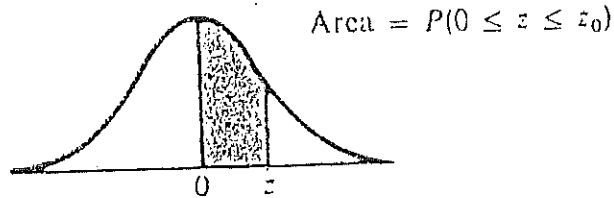
z_0	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
0.0	.0000	.0040	.0080	.0120	.0160	.0199	.0239	.0279	.0319	.0359
0.1	.0398	.0438	.0478	.0517	.0557	.0596	.0636	.0675	.0714	.0753
0.2	.0793	.0832	.0871	.0910	.0948	.0987	.1026	.1064	.1103	.1141
0.3	.1179	.1217	.1255	.1293	.1331	.1368	.1406	.1443	.1480	.1517
0.4	.1554	.1591	.1628	.1664	.1700	.1736	.1772	.1808	.1844	.1879
0.5	.1915	.1950	.1985	.2019	.2054	.2088	.2123	.2157	.2190	.2224
0.6	.2257	.2291	.2324	.2357	.2389	.2422	.2454	.2486	.2517	.2549
0.7	.2580	.2611	.2642	.2673	.2704	.2734	.2764	.2794	.2823	.2852
0.8	.2881	.2910	.2939	.2967	.2995	.3023	.3051	.3078	.3106	.3133
0.9	.3159	.3186	.3212	.3238	.3264	.3289	.3315	.3340	.3365	.3389
1.0	.3413	.3438	.3461	.3485	.3508	.3531	.3554	.3577	.3599	.3621
1.1	.3643	.3665	.3686	.3708	.3729	.3749	.3770	.3790	.3810	.3830
1.2	.3849	.3869	.3888	.3907	.3925	.3944	.3962	.3980	.3997	.4015
1.3	.4032	.4049	.4066	.4082	.4099	.4115	.4131	.4147	.4162	.4177
1.4	.4192	.4207	.4222	.4236	.4251	.4265	.4279	.4292	.4306	.4319
1.5	.4332	.4345	.4357	.4370	.4382	.4394	.4406	.4418	.4429	.4441
1.6	.4452	.4463	.4474	.4484	.4495	.4505	.4515	.4525	.4535	.4545
1.7	.4554	.4564	.4573	.4582	.4591	.4599	.4608	.4616	.4625	.4633
1.8	.4641	.4649	.4656	.4664	.4671	.4678	.4686	.4693	.4699	.4706
1.9	.4713	.4719	.4726	.4732	.4738	.4744	.4750	.4756	.4761	.4767
2.0	.4772	.4778	.4783	.4788	.4793	.4798	.4803	.4808	.4812	.4817
2.1	.4821	.4826	.4830	.4834	.4838	.4842	.4846	.4850	.4854	.4857
2.2	.4861	.4864	.4868	.4871	.4875	.4878	.4881	.4884	.4887	.4890
2.3	.4893	.4896	.4898	.4901	.4904	.4906	.4909	.4911	.4913	.4916
2.4	.4918	.4920	.4922	.4925	.4927	.4929	.4931	.4932	.4934	.4936
2.5	.4938	.4940	.4941	.4943	.4945	.4946	.4948	.4949	.4951	.4952
2.6	.4953	.4955	.4956	.4957	.4959	.4960	.4961	.4962	.4963	.4964
2.7	.4965	.4966	.4967	.4968	.4969	.4970	.4971	.4972	.4973	.4974
2.8	.4974	.4975	.4976	.4977	.4977	.4978	.4979	.4979	.4980	.4981
2.9	.4981	.4982	.4982	.4983	.4984	.4984	.4985	.4985	.4986	.4986
3.0	.4987	.4987	.4987	.4988	.4988	.4989	.4989	.4989	.4990	.4990