KE2 – MCQ Questions

Question 01

You are required to choose the most appropriate answer.

1.1 Company Alpha is considering following four independent projects for investment. The initial cash outflow required for each project is Rs. 15 million. Alpha uses discount rate of 12% in evaluating project cash flows. The observations made for each project are as follows:

(a) IRR of Project A is 15%
(b) IRR of Project B is 10%
(c) Project C gives a Present Value of future cash inflows of Rs. 18 million.
(d) Project D gives a Present Value of future cash inflows of Rs. 12 million.

Identify the feasible projects Alpha can select to invest.

(1) Project A and Project C
(2) Project B and Project D
(3) Project A and Project D
(4) Project B and Project C

1.2 Probability of Saman getting through CA Executive level examination is 80%. If he gets through CA Executive level, the probability that he will proceed to do CA Business level is 60%. If he does CA Business level, the chance for him to complete it successfully is 70%. Probability that Saman will not complete CA Business level is:

(1) 30% (2) 33.6% (3) 66.4% (4) 14.4 %

1.3 On 01/04/2015, Company A purchased 250kg of a new raw material X at Rs. 48 per kg. On 15/04/2015, company purchased another 150kg of raw material X at Rs. 52 per kg. There was no any material issue between these two dates. On 16/04/2015, company issued 200kg of material X for production. Weighted average cost of this issue is:

(1) Rs. 10,000 (2) Rs. 9,600 (3) Rs. 10,400 (4) Rs. 9,900

1.4 Probability of raining in July is 0.4. If it does not rain in July, probability of raining in August is 0.8. If it rains in July, the probability of raining in August is 0.6. Find the probability that it will rain in August.

(1) 0.72 (2) 0.60 (3) 0.80 (4) 0.44

1.5 The Median and Variance of a normal distribution is given. You have been asked to compute Z-score for a given value of the variable. With the above information, whether it is possible for you to compute Z-score for a given value of the variable?

(1) In the absence of mean value it is not possible.

(2) In the absence of Standard deviation it is not possible.

(3) In the absence of both mean and standard deviation it is not possible.

(4) It is possible to compute Z-score.

1.6 Of a sample of 100 students, 50 students got through mathematics. At 99% confidence level in a population of 1,000 students, number of students expected to pass mathematics will be:

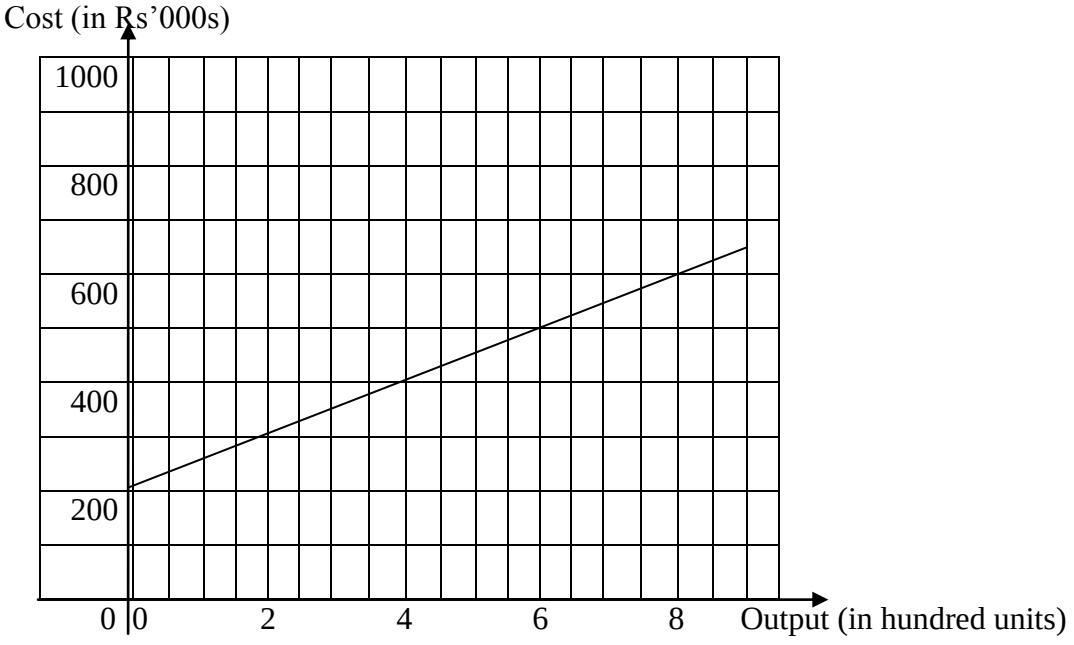
(1) Exactly 500

(2) 1,000 (0.50 +/- 2.58 * 0.05)

(3) 1,000 (0.50 +/- 1.96 * 0.05)

(4) 4

1.7 Following graph shows production cost function of a product. Selling price of this product is Rs. 900 per unit. Calculate the break-even output in number of units.



(1) 200 units (2) 400 units (3) 500 units (4) 600 units

1.8 Of the students in a class, 60% are male and 30% travel by public transport. Probability that a student selected at random, to be a female who is travelling by public transport is:

(1) 0.6 (2) 0.3 (3) 0.9 (4) 0.12

1.9 Cash flows of two projects during the project lifetime of 4 years is given below:

	Year 0	Year 1	Year 2	Year 3	Year 4
Project A	(Rs. 600,000)	Rs. 300,000	Rs. 300,000	Rs. 200,000	Rs. 200,000
Project B	(Rs. 900,000)	Rs. 450,000	Rs. 450,000	Rs. 300,000	Rs. 300.000

dentify the **correct** statement from the following:

(1) Project A will have higher NPV as compared to Project B

(2) NPV of both projects will be the same

(3) IRR of Project A and project B will be equal

(4) IRR of project B will be higher than that of project A

1.10 IRR of project P is 15%, project Q is 12% and project R is 18%. Out of these three projects, which project is profitable?

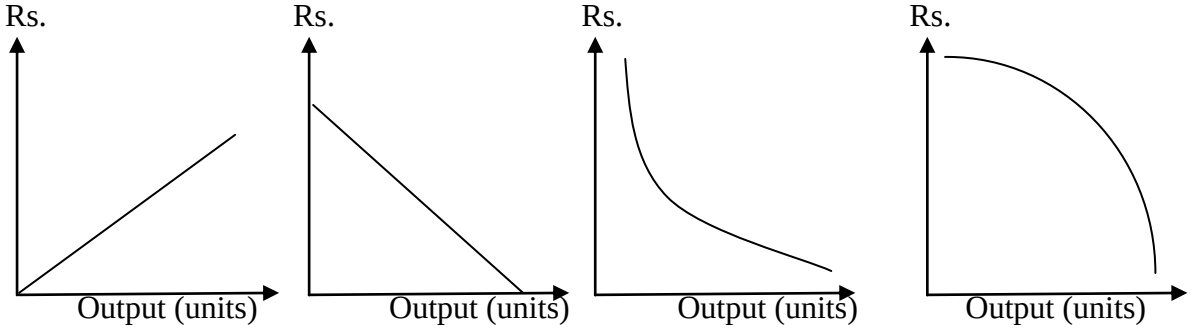
(1) Project P

(2) Project Q

(3) Project R

(4) No adequate information to decide the profitability of the projects.

1.11 Which of the following graphs depicts fixed cost per unit in a production process?



1.12 Correct statement in respect of the function $Y = x^2 + 10x + 500$ is:

(1) Y will be at its maximum when x = + 5

(2) Y will be at its minimum when x = + 5

(3) Y will be at its maximum when x = - 5

(4) Y will be at its minimum when x = - 5

1.13 The demand function and supply function for a particular product are as follows:

Demand: $Q_d = 1000 - 4p$
Supply: $Q_s = 2p + 40$

The equilibrium price is;

(1) Rs. 160 (2) Rs. 145 (3) Rs. 100 (4) None of the above.

1.14 A person deposited Rs. 100,000 in a deposit where interest is compounded every 6 months. The value of this deposit at the end of first year is Rs. 116,640. Applicable interest rate is;

(1) 16% (2) 16.64% (3) 8.32% (4) 8%

1.15 Mean scores and respective Standard Deviations of two players are given below:

Player	**Mean Score**	**Standard deviation**
Aye	52	18
Bee	42	16

Select the correct statement from the following:

(1) Aye has higher absolute spread and higher relative spread

(2) Bee has lower absolute spread but higher relative spread

(3) Bee has lower absolute spread and lower relative spread

(4) Aye has lower absolute spread and lower relative spread

1.16 A company invested Rs. 400,000 on a machine in Year-0 and the net cash inflows from its operation for the 4 years from Year 1 onwards is Rs. 150,000 each year. At the end of Year-4, the scrap value of the machine was Rs. 100,000. The average Accounting Rate of Return is:

(1) 30% (2) 150% (3) 50% (4) 100%

1.17 Nominal interest rate is 8%. Inflation rate is 6%. Then the real interest rate will be;

(1) 14%

(2) More than 8% but less than 14%

(3) Will be between 6% and 8%

(4) Less than 6%

1.18 A person spent ⅜th of his February salary in purchasing food items. Out of the remaining amount 40% was spent on domestic expenses. Then he paid Rs. 8,000 for his child's study. After making all the above payments, of the balance amount he paid ¼th to his parents. If he is left out with Rs. 12,000, what was his salary for the month of February?

(1) Rs. 64,000 (2) Rs. 48,000 (3) Rs. 60,000 (4) Rs. 58,400

Answer 1

1.1 Project A's IRR is 15% which is higher than the required rate of return of 12%. As the NPV of this project is zero at 15% discount factor, it will turn out to be positive when the rate is less than 15%. Therefore, Project A is acceptable.

Project B's IRR is 10%. It means at any rate higher than 10%, the NPV of this project will be negative. Company's required rate of return is 12%. Therefore project B is not acceptable.

Project C:	Future cash inflows	= Rs. 18 million
	Initial cash outflow	= Rs. 15 million
	NPV	= Rs. 3 million

As NPV is positive, Project C is acceptable.

Project D:	Future cash inflows	= Rs. 12 million
	Initial cash outflow	= Rs. 15 million
	NPV	= - Rs. 3 million (i.e, negative value)

As NPV is negative, it is not acceptable.

Therefore, correct answer is (1)

1.2 Probability of Saman completing the business level is = 0.80 * 0.60 * 0.70 = 0.336
Probability of Saman not completing the business level is = 1 – 0.336 = 0.664 OR 66.4 %

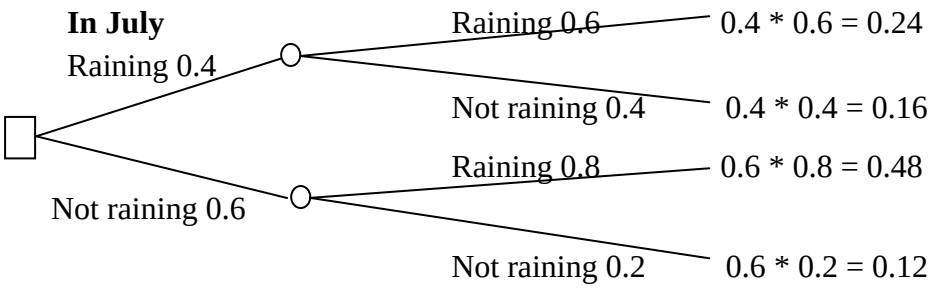
Correct Answer is (3)

1.3

Purchase cost:	01/04/2015	250 kg @ Rs. 48	= Rs. 12,000
	15/04/2015	150 kg @ Rs. 52	= Rs. 7,800
		400 kg	= Rs. 19,800
	Therefore, value of 200 kg		= Rs. 9,900

Correct Answer is (4)

1.4



Probability for raining in August = 0.24 + 0.48 = 0.72 **Correct Answer is (1)**

1.5 Z-score = $(x - \mu) / \delta$

From the above formula, it is obvious, if you know the mean μ and standard deviation δ.

In a normal distribution Mean = median.
Standard deviation = $(\text{Variance})^{½}$

Therefore, if median and variance are known, Z-score can be calculated.

Correct answer (4)

1.6 **Correct answer (2)**

Proportion of students in the survey passed mathematics=50/100=0.5

Therefore, Proportion of students failed= 1-0.5= 0.5

Therefore Standard Error= $\sqrt{P(1-0.5)/n}$= $\sqrt{0.5*0.5/100}$= 0.05

Therefore proportion of students passing mathematics at 99% confidence level

= 0.5+/- 2.58* S.E

= 0.5+/- 2.58* 0.05

Therefore, in a population of 1000 students, number of students expected to pass mathematics= 1000 (0.5+/- 2.58 *0.05)

1.7 From the graph:

Total cost of 800 units	= Rs. 600,000
Fixed cost	= Rs. 200,000
∴ Variable cost of 800 units	= Rs. 400,000
∴ Variable cost per unit	= Rs. 500

Contribution per unit = sales price – variable cost = Rs. 900 – Rs. 500 = Rs. 400

Therefore, Break-even output = Fixed cost / unit contribution = Rs. 200,000 / Rs. 400

= 500 units

Correct answer (3)

1.8 Probability that the selected person is a female = 0.40

Probability that a person travel by public transport = 0.30

Probability that selected person is a female travel by public transport = 0.4 * 0.3 = 0.12

Correct answer (4)

1.9 It can be noticed that each cash flows of Project B is 1½ times of Project A. As the pattern of cash flows is similar, both projects will have same IRR, which is a relative measure.

As each cash flow is proportionately more in Project B as compared to project A, the NPV of project B will be higher.

Correct answer (3)

1.10 Ranking projects using IRR is not possible

Correct answer (4)

1.11 Fixed cost per unit will fall at a higher rate at the beginning and at lower rate thereafter.

Correct answer (3)

1.12 $y = x^2 + 10x + 500$

Then $dy/dx = 2x + 10$; At turning point $dy/dx = 0$; therefore $2x + 10 = 0$ OR **x = -5**

$d^2y/dx^2 = +2$ denotes a minimum point

Correct answer (4)

1.13 Demand: $Q_d = 1,000 – 4p$
Supply: $Q_s = 2p + 40$

At equilibrium point $Qd = Q_s$; Therefore, $1,000 – 4p = 2p + 40$. Hence, p = Rs. 160.

Correct answer (1)

1.14 Amount deposited 100,000

Total interest at the end of 1st year = $100,000 (1 + r/2)^{2 =}$ 116,640

Therefore, $(1 + r/2)^2 = 116,640 / 100,000$

$(1+ r/2) = (116,640/100,000)^{½ =} (11,664/10,000)^{½} = 108/100 = 1.08$

, r = 0.16 => 16%

Correct answer (1)

1.15 Coefficient of variation of Aye = δ/μ = 18/52 = 0.346
Coefficient of variation of Bee = 16/42 = 0.381

Absolute spread is measured by standard deviation δ and relative spread is measured by coefficient of variation.

Correct answer (2)

1.16 Net cash inflows per annum = Rs. 150,000

Accounting annual profit = Rs. 150,000 – annual depreciation

= Rs. 150,000 – (400,000 – 100,000)/4 = Rs. 75,000

Average investment = (Rs. 400,000 + Rs100, 000) / 2 = 250,000

Therefore, Accounting rate of return ARR = 75,000 / 250,000 = 30%

Correct answer (1)

1.17 Real interest rate = 1.89%

Correct answer (4)

1.18

Ultimate balance in hand	Rs. 12,000
Amount paid to parents (12,000 * 4/3 * 1/4)	Rs. 4,000
	Rs. 16,000
Amount paid to child's studies	Rs. 8,000
	Rs. 24,000
Domestic expenses (24,000 * 40/60)	Rs. 16,000
	Rs. 40,000
Paid for food items (40,000 * 3/5)	Rs. 24,000
Total salary for the month	**Rs. 64,000**

Correct answer (1)