

2014 2ND CYCLE BUSINESS MATHEMATICS

1. If the probability of success is 0.25, the probability of obtaining the first success within the first three trials is
A) 0.428 B) 0.5781 C) 0.1406 D) 0.25
2. If $P(A/B) = 0.4$ and $P(B) = 0.3$ find $P(A \cap B)$
A) 0.171 B) 0.525 C) 0.571 D) 0.12
3. The relationship between two capitals A and B
 $\log A + \log B = 8.01781$
 $\log B - \log A = 0.08825$, the value of A and B are
A) 11300 and 9220 B) 50000 and 61280 C) 25000 and 20398 D) 17158 and 14000
4. Che just won a premier game and want to put some money away so that he will have 75000 frs for his child's education 18 years from onw. How much does he need to invest today if he can earn 7.5% compounded annually
A) 20.404 B) 18980 C) 17271 D) 15763
5. The crop yield in kg(y) and expenditure on fertilizer (x) in thousands are linked by the linear regression equation $Y = 3 + 2.5x$ the yield in kg when 5000 is spend is fertilizer is;
A) 12 500 B) 3 000 C) 12 503 D) 27 500
6. Given that $TC = 12 + 7x$ and $TR = 21x - 2x^2$ profit is
A) $-2x^2 - 5x - 12$ B) $2x^2 + 5x + 12$ C) $2x^2 - 5x + 12$ D) $-2x^2 + 5x + 12$

7. A project with an initial outlay of 20,000frs has a single inflow of 25,000 frs after 4 years. The NPV at 19% is
A) 5000frs B) 17075frs C) 3415frs D) -2925frs
8. Given that the Demand function for a product is given by $P = 2 - x$ where x is the quantity demanded. The Marginal revenue function is;
A) 2 B) $2 - 2x$ C) $2 - x$ D) $2x - x^2$
9. The MC function of a production is $x + 2$. If FC is 700, then TC function is
A) $X^2 - 2x + 700$ B) $x + 702$ C) $2 - x$ D) $2x - x^2$
10. Given the probability distribution table below;
- | | | | | | | |
|--------|-----|-----|---|-----|-----|-----|
| X | 1 | 2 | 3 | 4 | 5 | 6 |
| P(x=x) | 2/9 | 1/9 | 0 | 1/9 | 2/9 | 3/9 |
- The expectation is:
A) 3.5 B) 20 C) 4 D) 36
11. A card is selected from a pack of 52 playing cards. The probability that it an ace of king is:
A) 1/64 B) 4/13 C) 4/52 D) 2/13
12. The sum of 3 numbers in A.P is 15, if the first is $\frac{1}{4}$ of the third. The three numbers are;
A) 3,5,7 B) 8,5,2 C) 1,5,9 D) 2,5,8
13. Mr. Kum invested the sum of 120 850frs at BICEC bank for 2 months, 3 weeks and 4 days after which he withdrew the total sum of 120,850frs the interest rate is:
A) 3.5% B) 4.25% C) 3% D) 4%
14. Ngia Ndoah shared his property to his 3 sons. Tanui, Mingo and Che. Che received $\frac{1}{2}$ of the property while Mingo received $\frac{3}{4}$ of Tanui and Che's share put together. What is the value o the property shared if Tanui received 250,000frs?
A) 562,500frs B) 3 500 000frs C) 18,750,000 D) 2,500,000
15. Awah acquired a computer for which he paid 250,000 frs immediately and promise to settle the balance by 4 constant ordinary semestrial annuities of 161,611.24frs. what is the cost of the computer given that the interest rate is 12.36% per annum?
A) 791000frs B) 810000frs C) 56400frs D) 1308000frs
16. Three bills whose nominal value are 400,000frs, 600,000frs and 500,000frs respectively due on 30days, 45days and 60days are replaced by a single bill. The average due date of the single bill is:
A) 45days B) 46days C) 30days D) 50days
17. The sum of 3 numbers increasing in geometric progression is 9.5 and product is 27. The common difference is
A) 1.5 B) 0.667 C) 2.5 D) 2
18. The sum of 400,000frs is invested at the rate of 5% compound interest has yielded a total interest o 162,840frs. The duration of the investment is:
A) 5years B) 8years C) 7years D) 6years
19. From the amortization of an ordinary borrowing, the outstanding debt at the end of the last 1 year is 524,000frs. What is the value of the constant annuity at the interest rate of 7.25% per annum?
A) 540 000frs B) 581 295frs C) 504 186frs D) 528 652.24frs
20. An enterprise realized sales of 25, 26, 30, 28, 25 and 40 respectively in January, February, march, April, May and June using the moving average period 3 and sing the extreme point method, the equation of the straight line will be;
A) $2.7x + 22.3$ B) $3x + 23$ C) $0.67x + 25$ D) $1.33x = 24.33$

21. A business man purchased goods with 450,000frs and incurred transport charges of 15000 frs and selling expenses of 20% of the cost price. What is the cost price?
A) 465 000frs B) 581 250frs C) 558 000frs D) 543 000frs
22. The cost of a machine is $\frac{8}{15}$ of the selling price. If the cost price is 20,000frs, the selling price is
A) 27 500frs B) 581 250frs C) 10 666.67frs D) 32 555frs
23. A man decided to share the sum of 3 000 000frs to his 3 children aged 12years, 13years and 16years such that when they all reach the age of 18, their future values will be equal. What is the value of the common future value if the shares were invested at a compound interest rate of 7.5%
A) 1 357 556.5f B) 750 000f C) 843 527.52f D) 756 548.88f
24. Penn took 2 bills of the same nominal value for discounting at the rate of 6% for 36days and 48 days respectively. Given that he went back with 1,429,920f, what is the nominal value per bill?
A) 650 000f B) 720 000f C) 760 000f D) 800 000f
25. A truck saves 12,000frs every month at 2% per month compound interest to enable him buy a motor bike after 2 years. After 2 years, the total amount collected was not sufficient but his uncle assisted him to buy the bike for 390,000frs. How much was given by his uncle.
A) 24 937.65f B) 24 240f C) 32 154.54f D) 26,543.53f