**PATFIN HIGH SCHOOL, AKESAN, LAGOS STATE**

**FIRST TERM EXAMINATION [2018/2019]**

**SUBJECT: MATHEMATICS CLASS: J. S. S. 3**

**DURATION: 2 hours SECTION A**

**INSTRUCTION: choose the correct option lettered A to D. Answer all questions**

1. Express 1011two in denary
2. 100ten b) 11ten c) 16six d) 8five
3. Find the missing number if the following addition is in base two

X X X X X

1 1 1

1 0 0 1 0 1

1. 11110 b) 10110 c)10101 d) 10011
2. If 9 exercise books cost ₦540.00, how much will 14 of such cost?
3. # 640.00 b) # 740.00 c) # 840.00 d) # 960.00
4. Subtract 101two from 10111two.
5. 10100two b) 10010two c) 10101two d) 11000two
6. 15 boys can cut the grass on the football field in 12 days. How many days will it take 45 boys?
7. 15 b) 18 c) 2 d) 4
8. Femi collected a loan of ₦500,000 at an interest rate of 20% per annum. What amount will he pay back at the end of the year?
9. ₦600,000 b) ₦450,000 c) ₦1000,000 d) ₦200,000
10. Given that I = , make P the subject of the formula.
11. b) c) d)
12. Evaluate , when y =2.
13. 1 b) 2 c) 3 d)0
14. Given that . Find the value of x when y = 4.
15. 5 b) 17 c) 0 d) 7
16. Expand and simplify m (3m-1) -(3m-1)
17. m2 +3m-1 b) 4m2-3m+1 c) 4m-3m+1 d) 3m2-4m+1
18. Factorise 40y3-25y2-35y4 completely
19. 8y2 (5y-5-7y2) b) 5 (8y3-5y2-7y3) c) 8 (5y3-5y2-7y2) d) 5y2 (8y-5-7y2)
20. Find the product of (101)2 and 1.
21. 10011two b) 10101two c) 1100̄1two d)10110two

**Use the information to answer questions 13 and 14**

**The resistance R Newton to the motion of a car varies directly as the square of the speed S.**

1. What is the equation connecting R and S?
2. R=KS b) R=K/S c) R=KS2 d) K=R/S
3. Given that R=36 and S=2, what is K?
4. 1/18 b) 9 c) 500 d)1
5. Express 124five in denary
6. 41ten b) 39ten  c) 14ten d) 21five

**SECTION B SUB-OBJECTIVE**

**Provide the answers to the following questions**

1. 32ten is equal to \_\_\_\_\_\_\_\_\_\_\_\_\_ in binary number.
2. 3 metres of clothing material cost ₦660, 2 metres will cost \_\_\_\_\_\_\_\_\_\_\_

**Answer question 18 and 19 with the following information**

**George saved ₦ 15,000 for 2 years at 8% per annum with Zenith Bank Plc**

1. Find his compound interest
2. Find his final amount
3. 101 × 11=?

**SECTION C THEORY**

**Answer question one and any other three.**

1. Factorize the following: i)

ii)

1. Factorize the following: i)

ii)

1. Solve the following equations: i) =

ii)

1. The price of a house was ₦ 23 400 000 in 2010. At the end of each year, the price increased by 6%.
2. Find the price of the house after 3 years
3. Find the price of the house after 5 years
4. a). Convert 100.1111two to a base 10 number

b) Convert 25.0625ten to a base two number

6 a) Make h the subject of the formula in A=⌅r√h2 +r2

b) Given that A =√s(s-a) (s-b) (s-c). Find the value of A when s=10, a=4, b=2 and c=5