MARTHOMA RESIDENTIAL SCHOOL, TIRUVALLA

SECOND TERMINAL EXAMINATION 2017-18

MATHEMATICS

Standard VIII

Time: 2 hrs
Marks: 80

I. (a) Evaluate (using formulae) $\frac{2.43\times2.43-2\times2.43\times1.67+1.67\times1.67}{2.43-1.67}$. (3)

(b) Find the measure of an angle, if five times of it's complement is 24^0 less than twice of it's supplement. (4)

(c) Find the product $\left(5y^2-\frac{4}{3}\right)\left(5y^2+\frac{1}{2}\right)$. (4)

II. (a) Add $6-3a+b, a-7-6b$ and $3b+2-a$. (3)

(b) Factorise $1-3a-28a^2$. (4)

(c) Find the rate of interest per year if the interest charged for 8 months be 0.06 times of the money borrowed. (4)

III. (a) What principal will amount to Rs.2400 at 4% per annum in 5 years? (3)

(b) If $x-\frac{1}{x}=6$, evaluate (i) $x^2+\frac{1}{x^2}$ and (ii) $x^4+\frac{1}{x^4}$. (4)

(c) Factorise $12x+75x^5-60x^3$. (4)

IV. (a) The diameter of a circle is 28cm. Find its (i) circumference (ii) area. (3)

(b) The perimeter of a triangle is $8y^2-9y+4$ and its two sides are $3y^2-5y$ and $4y^2+12$. Find its third side. (4)

(c) If $a-b-c=3$ and $a^2+b^2+c^2=72$, find $ab-bc+ca$. (4)

V. (a) Factorise $x^2+4xy+4y^2-9z^2$. (3)

(b) Find the product $(1-a)(1+a)(1+a^2)(1+a^4)$. (4)

(c) Divide $16m^3-46m^2+39m-9$ by $8m-3$. (4)

VI. (a) Calculate the difference between the compound interest and simple interest on Rs.10,000 in two years and 5% per year. (3)

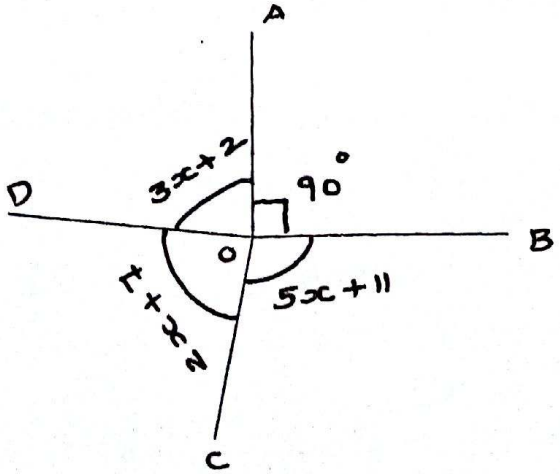
(b) Factorise $3(a+b)^2+15(a+b)-72$. (4)

(c) The circumference of a circular field is 308. Find it's (i) radius (ii) area. (use $\pi=\frac{22}{7}$) (4)

VII. (a) A certain sum amounts to Rs. 9440 in 3 years and to Rs. 10,400 in 5 years. Find the sum and rate percent. (3)

(b) In what time will the simple interest on Rs. 900 at 6% be equal to the simple interest on Rs. 540 for 8 years at 5%? (4)

(c) In the figure OA, OB, OC and OD are line segments. Find the value of x and each angle. (4)



VIII. (a) Find the simple interest on Rs. 1300 from December 23, 2002 to May 18, 2003 at $7\frac{1}{2}\%$ per annum. (3)

(b) The area of a circle is 1386 cm^2. Find its circumference. (Take $\pi = \frac{22}{7}$) (4)

(c) In the figure given below find the value of x. (4)