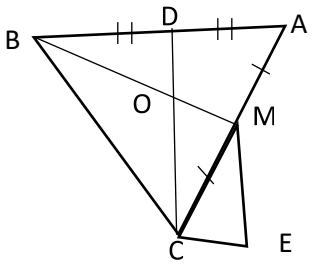
Group 'D' (4 × 5 = 20)

21. In a new year, the bank announced an offer with a 15% CI, Mr. A deposited Rs.10lakh. The following year the bank changed the policy to semiannual compound interest and he again deposited Rs.5 lakhs at the same rate. Find the total interest paid by the bank for him over 2 years.
22. Simplify: $\frac{p^3}{(p-q)^y} - \frac{3p^2}{(p-q)^{y-1}} + \frac{3p}{(p-q)^{y-2}} - \frac{1}{(p-q)^{y-3}}$
23. A person bought a cylinder having diameter 12cm and height 15cm full of ice cream for Rs.2500. If ice-cream is to be filled into cones of height 12cm and diameter 6cm having hemisphere shape on the top. If he sold each for Rs.40, what is his profit or loss?
24. In the given figure, D and M are the mid-points of AB and AC respectively. Prove: Area of ΔBOC=Area of parallelogram COME.



Best of Luck!

SOS CHILDREN'S VILLAGES NEPAL

SOS HERMANN GMEINER SCHOOLS IN NEPAL
Joint Pre-SEE Examinations-2079

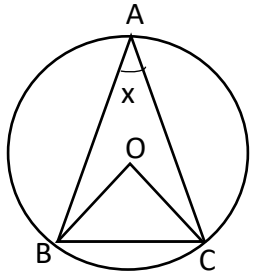
Subject: Comp. Mathematics **F.M.: 100**
Time: 3 Hrs.

Group 'A' (6 × 1 = 6)

1 a. If 1 dollar =Rs. 105.52, then convert 400 dollars into Nepali Rupees.
b. a, b and c are the sides of right angle triangle ABC. If AB is the longest sides, find the area of triangle.

2 a. Express $2\sqrt{3}$ into complete surd.
b. If mean is 25 and sum of product of frequency and mid value is 625, find N.

3 a. Write the relation between side of square and its diagonal.
b. Find x if BOC is an equilateral triangle.



Group 'B' (17 × 2 = 34)

4 a. 2% commission of Rs. 250000 should be paid to exchange it into pound sterling, what amount of pound sterling can be received? (€1=Rs.155.63)

b. A man bought a mobile for Rs. 44100 and sold it for Rs.40000 after 2 years. Find the rate of compound depreciation.

5 a. If the sides of a triangle in a triangular based prism are 6cm,8cm and 10cm and height of prism is 30cm, find its volume.

b. Find the curved surface area of cone having vertical height 24 cm and slanting height 25 cm.

c. Find the diameter of hemisphere whose volume is $6174\pi m^3$.

6 a. Find LCM of x^2-2x, x^3-8.

b. Solve: X-36=$\sqrt{x}$+6

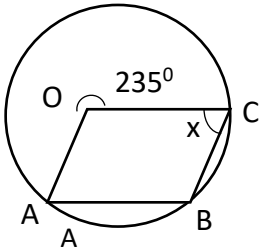
7 a. Simplify: $\sqrt{(x-y)^{-1}}\sqrt{(x+y)(x^2-y^2)}$

b. Simplify: $\frac{15^{n+2}-75.15^{n-1}}{110.15^n}$

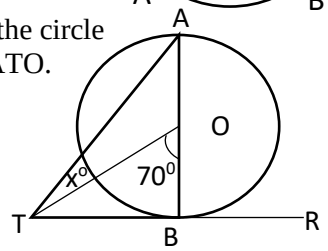
c. If the sum of two numbers is 20 and difference is 4, find the numbers.

8 a. PQRS is a parallelogram, whose area is $48cm^2$. If the height drawn from P and R are 6cm and 8cm respectively. Find the perimeter of parallelogram.

b. Find x where OC is parallel to AB from figure.



c. In the given figure, O is the centre of the circle and AB = TB. find the measure of ∠ATO.



9 a. In Δ PMN, PM=16cm, MN=20cm and area of Δ PMN is $80\sqrt{3}$ cm^2. Find ∠ PMN.

b. In a continuous series, the class where median lies 18-24, the sum of frequency is 40, the C.F. of pre-median class is 19 and the frequency of median class is 3, find median.

10 a. If X and Y are mutually exclusive events. If P(X)=$\frac{1}{8}$ and P(Y) =$\frac{5}{24}$ find P($\overline{X \cup Y}$).

b. There are 15 green and 10 yellow marbles of same shape and size in a box. Two of them are drawn one after another without replacement. Show all the possible outcomes in a tree diagram.

Group 'C' (10 × 4 = 40)

11. In a survey of 50 students, Ratio of number of students who like Nepali and History is 3:2 and 20 like both subjects and each likes at least one. Find the ratio of students who like only Nepali and only history by Venn-diagram.

12. The market price of an article is Rs.2400. after 20% discount and levied VAT. If a customer pays Rs. 2208, Find the VAT amount and rate of VAT.

13. Find the volume of square based pyramid whose LSA and side of square are $240cm^2$ and 12cm respectively.

14. Simplify: $\frac{1}{x-1}-\frac{2}{2x+1}+\frac{1}{x+1}-\frac{2}{2x-1}$

15. Find HCF: x^3-3x^2+3x-1, x^3-x^2-x+1, x^4-2x^3+2x-1

16. Prove the relationship between area of triangles standing on same base and between same parallel lines.

17. Construct a parallelogram ABCD in which AB=5.5cm, AD=6.5cm and diagonal BD=7cm. also construct another parallelogram equal in area to the parallelogram ABCD having one angle 60^0.

18. Verify experimentally central angle is double of inscribed angle having same arc.(two figure more than 3cm are required).

19. The breadth of a river is $15\sqrt{3}$m. The angle of elevation of the top of tree 15m high situated at the bank of river when observed from the opposite bank of the river is found to be α^0. Find α^0.

20. If lower quartile is 35, find x.

X	0–20	20–40	40–60	60–80	80–100
f	2	4	x	3	5