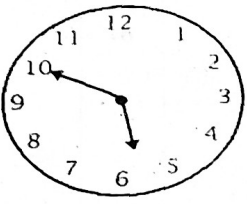


THE PRIME PRE- PLE TRIAL SET II EXAMINATIONS 2022

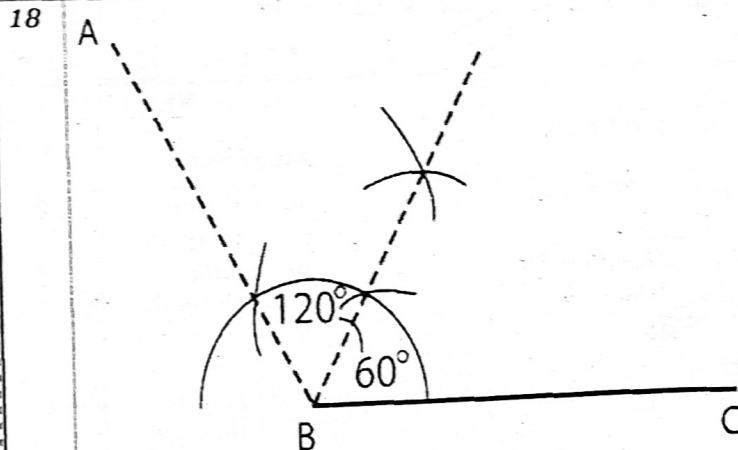
P.7 MATHEMATICS MARKING GUIDE

SECTION A (40 MARKS)

NO	SOLUTION	MAR KS	COMME NT	NO	SOLUTION	MAR KS	COMME NT
1	$78 \times 0 = 0$	B ₂	Follow through	2	$(A \cap B)'$ Complement of $(A \cap B)$	B ₂	Follow through
3	$2k + 8k - 7k$ $10k - 7k$ <u>$3k$</u>	M ₁ A ₁	Follow through	4	$7050 \div 7 + 0 + 5 + 0 = 12$ $1203 = 1 + 2 + 0 + 3 = 6$ 7050 is divisible by both 2 and 3, thus 7050 is exactly divisible by 6.	B ₁ B ₁	Follow through
5	$+ 4 - 2 = +6$	B ₂	Follow through	6	0.75×100 0.25×100 $\frac{75}{25} = 3$	M ₁ A ₁	Follow through
7		B ₂	Follow through	8	$12\text{kg} \div \frac{3}{4}\text{kg}$ $12\text{kg} \times \frac{4}{3}$ <u>$= 16\text{ sachets.}$</u>	M ₁ A ₁	Follow through
9	101 two $+ 11\text{ two}$ <u>1000 two</u>	M ₁ A ₁	Follow through	10	$12\frac{1}{2}\% = \frac{25}{200} = \frac{1}{8}$ $\frac{8}{8} - \frac{1}{8} = \frac{7}{8}$ $\frac{7}{8} \times 80 = 70$ <u>$= 70$</u>	M ₁ A ₁	Follow through
11	Sample space $= \{1, 2, 3, 4, 5, 6\}$ Desired charices $= \{2, 3, 5\}$ $\text{Prob} = \frac{DC}{SS} = \frac{3}{6}$	B ₁ B ₁	Follow through	12	$180^\circ - 140^\circ = 40^\circ$ $40 + 40 + e = 180^\circ$ $80 - 80 + e = 180^\circ - 80^\circ$ <u>$e = 100^\circ$</u>	M ₁ A ₁	Follow through
13	$18 = 2 \times 3 \times 3$ $F18 = \{2, 3, 3\}$ $F30 = 2 \times 3 \times 5$ $F30 = \{2, 3, 5\}$ <u>Common factors</u> $\{2, 3\}$ $\text{GCF} = 2 \times 3$ <u>$= 6$</u>	M ₁ A ₁	Follow through	14	$P = \text{side}(S) \times 4$ $P = 4s = 72$ $S = \frac{72}{4}$ <u>$= 18\text{cm}$</u>		
15	$C = \frac{1}{4} \pi d$ $C = \frac{1}{4} \times \frac{22}{7} \times 28$ $C = 22$ $P = 22m + 14cm + 14cm$ $P = 50cm$	M ₁ A ₁	Follow through	16	$2 - 2 - x \leq 5 - 2$ $-x \leq 3$ $-x \geq -3$ $-1 - 1$ $x \geq -3$	M ₁ A ₁	Follow through

17 $S = D \div T$
 $S = 72 \text{ km} \times \frac{45}{60} \text{ hr}$
 $S = 72 \text{ km} \times \frac{60}{45}$
 $S = 96 \text{ km/hr}$

M_1 Follow through
 A_1



19 $\frac{23}{912}$
 $\frac{\text{Sh. } 18400}{\text{Sh. } 800}$
 $\frac{4}{23} \text{ books}$

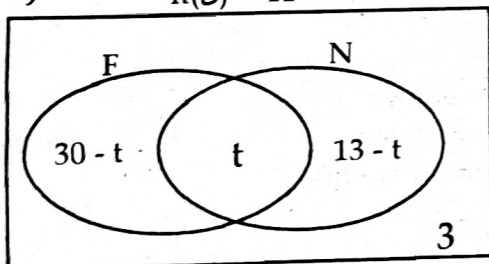
M_1 Follow through
 A_1

20 $\pi r^2 = A$
 $\frac{22}{7} r^2 = 154$
 $\frac{22}{22} r^2 = \frac{154 \times 7}{22}$
 $\sqrt{r^2} = \sqrt{49}$
 $r = 7 \text{ cm}$

B_1 Follow through
 B_1

SECTION B (60 Marks)

21 a) $n(E) = 41$



b)
 $t = 3 + 30 + 13 - 41$
 $t = 46 - 41$
 $t = 5$

c)
 $30 - t + 13 - t$
 $30 - 5 + 13 - t$
 $25 + 8$
 $= 33 \text{ pupils.}$

06

23 a) $d + 28^0 + 2d + 16^0 + 2d - 4^0 = 180^0$
 $d + 2d + 2d + 28^0 + 16^0 - 4^0 = 180^0$
 $5d + 40^0 = 180^0$
 $5d + 40^0 - 40^0 = 180^0 - 40^0$
 $\frac{5d}{5} = \frac{130^0}{5}$
 $d = 28^0$

b) $\angle XWY = 2d + 16^0$
 $= (2 \times 28^0) + 16^0$
 $= 56^0 + 16^0$
 $= 72^0$

05

22 a)

Hth	Tth	Th	H	T	Ones
1	6	8	4	9	7

$9 \times 10 = 90$
 $6 \times 10000 = 60000$

$$\begin{array}{r} 60000 \\ - 90 \\ \hline 59910 \end{array}$$

b) $852 = 800 + 50 + 2$
 $= \text{DCCC} + \text{L} + \text{II}$
 $= \text{DCCCLII}$

05

24 a)

$$\begin{array}{r} 0.8181 \\ 11 \overline{) 90} \\ \underline{- 88} \\ 20 \\ \underline{- 11} \\ 90 \\ \underline{- 88} \\ 20 \end{array}$$

$\frac{9}{11} = 0.8181 \dots$

b) $(\frac{64}{10} \times \frac{12}{100}) \div (\frac{6}{100} \times \frac{16}{100})$

$\frac{64}{10} \times \frac{12}{100} \times \frac{100}{6} \times \frac{100}{16}$

M_1 Follow through
 A_1
 M_1
 M_1
 A_1

05

25 a) $\frac{1170000}{35}$
Ksh 42000

b) $\frac{400 \times 3600}{12}$
 $\underline{£ = 300}$

05

26 a) $\frac{225\text{cm}^2}{21} = 225\text{cm}^2$
 $\sqrt{225\text{cm}} = 15\text{cm}$
Each side of the tile = 15cm
Length of the floor = $15\text{cm} \times 7$
 $\underline{= 105\text{cm}}$

b) Width
 $15\text{cm} \times 3$
 $= 45\text{cm}$
 $P = 2(105\text{cm} + 45\text{cm})$
 $P = 2 \times 150\text{cm}$
 $\underline{P = 300\text{cm}}$

Follow through

27 a)

HR	MIN
11	30am
+ 3	45
15	15
- 12	00
3	15pm

b) $D = S \times T$
 $D = 64 \frac{\text{km}}{\text{hr}} \times 3 \frac{3}{4}\text{hr}$
 $= 64\text{km} \times \frac{15}{4}$
 $\underline{= 240\text{km}}$

04

28 a) $I = P \times R \times T$
 18000
 $I = 360,000 \times \frac{30}{100} \times \frac{7}{2}$
 $I = 18000 \times 21$
 $\underline{I = \text{sh } 378000}$

b) Amount = $P + I$
 $= \text{Sh } 360000$
 $+ \text{Sh. } 378000$
 $\underline{\text{Sh } 738000}$

Follow through

29 a) $5p + 5x$
 $(5 \times p) + (5 \times x)$
 $(5 \times 6) + 5 \times 5p$
 $30 + 5 \times 5 \times 6$
 $30 + 150$
 $\underline{= 180}$

b) $x = \{-3, -2, -1, 0, 1, 2, 3, 4\}$

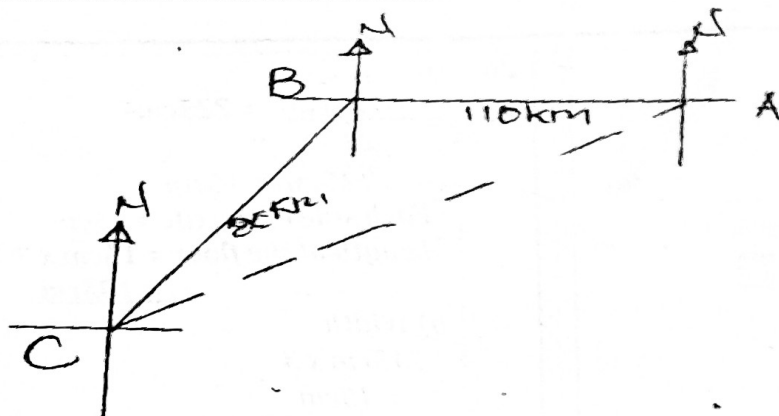
30 $\frac{\text{Volume}}{1000} = \frac{\pi r^2 h}{1000}$
 $\frac{22}{7} \times 70 \times 70 \times 200$
 $\frac{1000}{1000}$
 $\underline{22 \times 10 \times 70 \times 200}$
 $\frac{1000}{1000}$
 1540×2
 $\underline{= 3080 \text{ litres}}$

04

31 a) $y + 2y + 60^\circ + 90^\circ = 360^\circ$
 $3y + 150^\circ = 360^\circ$
 $3y + 150^\circ - 150^\circ = 360^\circ - 150^\circ$
 70°
 $\frac{3y}{3} = \frac{210^\circ}{3}$
 $\underline{y = 70^\circ}$
 $70^\circ \text{ repr. } 210$
 $1^\circ \text{ repr. } 210$
 70
 $1^\circ \text{ repr. } 3 \text{ pupils}$
 $360^\circ \text{ repr. } 360 \times 3$
 $\underline{= 1080 \text{ pupils}}$
b) $\frac{90}{360} \times 100\%$
 $\underline{25\%}$

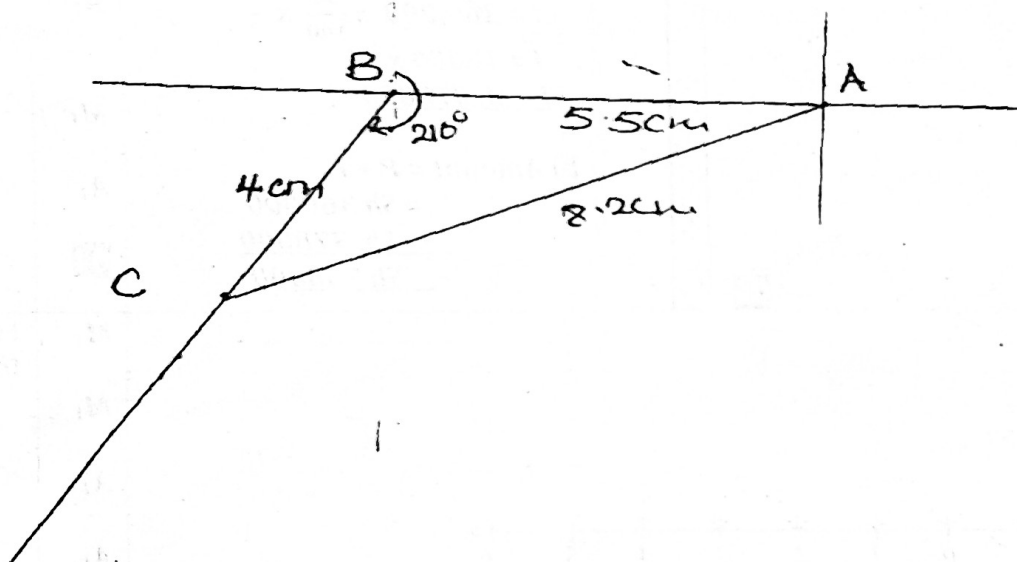
05

32 a)



$$AB = \frac{110}{20} = 5.5 \text{ cm}$$

$$BC = \frac{80}{20} = 4 \text{ cm}$$



b) 1cm repr. 20km
 8.2cm repr. 20×8.2
= 164km

S_1 Follow through

L_1

L_1

M_1

A_1

05