

OLGC

S.5 MATHEMATICS HOLIDAY WORK

PAPER II 2022

Attempt all questions.

1. The heights in centimetres of 100 recruits who reported for a recruitment exercise were recorded as follows.

Heights (cm)	Number
148 - 152	6
153 - 157	11
158 - 162	17
163 - 167	28
168 - 172	20
173 - 177	15
178 - 182	3

- (a). Draw a histogram to represent the heights of the recruits and estimate the modal height.
- (b). Using a working mean of 165 cm, calculate
- (i). Mean
- (ii). Standard deviation
9. (a) Given the following probability distribution

X	0	1	2	3	4
$P(x=x)$	0.1	0.2	0.3	0.2	0.2

Find (i) $E(x)$

(ii) $E(6x+2)$

2mks

(b) A random variable X has probability density function given by;
10mks

$$f(x) = \begin{cases} \frac{2}{3}(x+1) & -1 \leq x \leq 0 \\ \frac{1}{3}(2-x), & 0 < x \leq 2 \\ 0 & \text{otherwis} \end{cases}$$

Find;

- (i) $E(x)$
- (ii) $\text{Var}(x)$
- (iii) Mode
- (iv) Median
- (v) semi-interquartile range

3. Two bags A and B contains Red and Green fruits. Bag A has 4 red and 3 green fruits while bag B contains 2 Red and 5green fruits. A bag is selected at random and two fruits are randomly picked from it without replacement.

Find (i) Both fruits are green

(ii) The fruits are of different colours

(iii) The second fruit is green given that the first was also green

(12marks)

END