**Q1.** If the sum of the zeros of the quadratic polynomial f(x) = $kx^2$ - 3x + 5 is 1, write the value of k. **2 Marks**

**Q2.** Very-Short-Answer Question: **2 Marks**
If $\alpha$ and $\beta$ are the zeroes of a polynomial $2x^2$ + 7x + 5, write the value of $\alpha + \beta + \alpha\beta$.

**Q3.** If the product of zeros of the quadratic polynomial f(x) = $x^2$ - 4x + k is 3, find the value of k. **2 Marks**

**Q4.** If $\alpha$ and $\beta$ are the zeroes of the quadratic polynomial f(x) = $ax^2$ + bx + c, then evaluate: **2 Marks**
$\frac{1}{\alpha} + \frac{1}{\beta} - 2\alpha\beta$

**Q5.** Find the mode of the following frequency distribution: **3 Marks**

| **Class:** | 10-14 | 14-18 | 18-22 | 22-26 | 26-30 | 30-34 | 34-38 |
|---|---|---|---|---|---|---|---|
| **Frequency:** | 8 | 6 | 11 | 20 | 25 | 22 | 10 |

**Q6.** The following table gives the number of participants in a yoga camp: **3 Marks**

| **Age (in years):** | 20-30 | 30-40 | 40-50 | 50-60 | 60-70 |
|---|---|---|---|---|---|
| **No. of Participants:** | 8 | 40 | 58 | 90 | 83 |

Find the modal age of the participants.

**Q7.** For what value of x, is the median of the following frequency distribution 34.5? **3 Marks**

| **Class** | **Frequency** |
|---|---|
| 0-10 | 3 |
| 10-20 | 5 |
| 20-30 | 11 |
| 30-40 | 10 |
| 40-50 | x |
| 50-60 | 3 |
| 60-70 | 2 |



**Q8.** If $\alpha$ and $\beta$ are the zeros of the quadratic polynomial f(x) = $6x^2$ + x − 2, find the value of $\frac{\alpha}{\beta} + \frac{\beta}{\alpha}$ **3 Marks**

**Q9.** If one zero of the quadratic polynomial f(x) = $4x^2$ - 8kx - 9 is negative of the other, find the value of k. **3 Marks**

**Q10.** Find the zeros of the following quadratic polynomial and verify the relationship between the zeros and the coefficients: **3 Marks**
$x^2$ - 5

**Q11.** If the sum of the zeros of the quadratic polynomial f(t) = $kt^2$ + 2t + 3k is equal to their product, find the value of k. **3 Marks**

**Q12.** If $\alpha,\ \beta$ are the zeros of the polynomial f(x) = $x^2$ - 5x + k such that $\alpha - \beta = 1$, find the value of k. **3 Marks**

**Q13.** If $\alpha$ and $\beta$ are the zeroes of the quadratic polynomial f(x) = $x^2$ - x - 4, find the value of $\frac{1}{\alpha} + \frac{1}{\beta} - \alpha\beta$ **3 Marks**

**Q14.** If $\alpha$ and $\beta$ are the zeroes of the quadratic polynomial p(s) = $3s^2$ - 6s + 4, find the value of $\frac{\alpha}{\beta}+\frac{\beta}{\alpha}+2\left(\frac{1}{\alpha}+\frac{1}{\beta}\right)+3\alpha\beta.$ **3 Marks**

**Q15.** The median of the following data is 525. Find the values of x and y, if total frequency is 100: **4 Marks**

| **Class:** | 0-100 | 100-200 | 200-300 | 300-400 | 500-600 | 700-800 |
|---|---|---|---|---|---|---|
| **Frequency** | 2 | 5 | x | 12 | 17 | 20 |

**Q16.** If the median of the following frequency distribution is 32.5 Find the valuse of $f_1$ and $f_2$. **4 Marks**

| **Class:** | 0-10 | 10-20 | 20-30 | 30-40 | 40-50 | 50-60 | 60-70 | Total |
|---|---|---|---|---|---|---|---|---|
| **Frequency:** | $f_1$ | 5 | 9 | 12 | $f_2$ | 3 | 2 | 40 |

**Q17.** Find the zeros of the following quadratic polynomial and verify the relationship between the zeros and the coefficients: **4 Marks**

$3x^2$ - x - 4

**Q18.** A survey regarding the heights (in cm) of 50 girls of Class X of a school was conducted and the following data was obtained: **6 Marks**

| **Height in cm** | 120 - 130 | 130 -140 | 140 - 150 | 150 - 160 | 160 - 170 | **Total** |
|---|---|---|---|---|---|---|
| **Number of girl** | 2 | 8 | 12 | 20 | 8 | 50 |

Find the mean, median and mode of the above data.

**Q19.** Find the mean, mode and median of the following data: **6 Marks**

| **Classes** | **Frequency** |
|---|---|
| 0 - 10 | 5 |
| 10 - 20 | 10 |
| 20 - 30 | 18 |
| 30 - 40 | 30 |
| 40 - 50 | 20 |
| 50 - 60 | 12 |
| 60 - 70 | 5 |

**Q20.** Find the zeros of the following quadratic polynomial and verify the relationship between the zeros and their coefficients: **6 Marks**

$p(x)=\sqrt{3}x^2+10x+7\sqrt{3}$