18. Following table gives the scores of 100 candidates in an entrance examination:

Marks	100-150	150-200	200-250	250-300	300-350	350-400
No. of Students	16	15	14	32	11	12

Find mode.

SECTION-C

19. Show that any positive odd integer is of the form 6p+1 or 6p+5, where p is some integer.

20. show that $5-2\sqrt{3}$ is irrational number.

OR

Show that $\frac{5\sqrt{2}}{\sqrt{3}}$

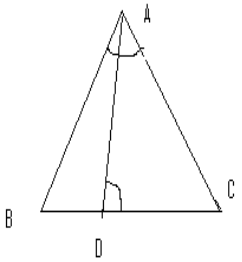
21. A number consists of two digits whose sum is 9. If 27 is added to the number, the digits are interchanged. Find the number.

22. Obtain all zeros of polynomial $x^4+x^3-34x^2-4x+120$ if two of its zeros are 2 and -2.

23. prove that: $\frac{\cos A}{1+\sin A}+\frac{1+\sin A}{\cos A}=2\sec A$.

24. If $\cos\theta+\sin\theta=\sqrt{2}\cos\theta$, then show that $\cos\theta-\sin\theta=\sqrt{2}\sin\theta$.

25. D is any point on the side BC of Δ ABC such that $\angle ADC=\angle BAC$ .Prove that $\frac{CA}{CD}=\frac{CB}{CA}$.



26. Δ ABC and Δ DBC are on the same base BC. AD and BC intersect at O. Prove that $\frac{ar(\triangle ABC)}{ar(\triangle DBC)}=\frac{AO}{DO}$.

27. Using step deviation method, calculate arithmetic mean of the following:

Class Interval	0-20	20-40	40-60	60-80	80-100	100-120
Frequency	20	35	52	44	38	31

OR

Find the value of 'p' if mean of following data is 53.

Class	0-20	20-40	40-60	60-80	80-100
Frequency	12	15	32	p	13