



B.K. BIRLA CENTRE FOR EDUCATION

SARALA BIRLA GROUP OF SCHOOLS
A CBSE DAY-CUM-BOYS' RESIDENTIAL SCHOOL
TERM 1 EXAMINATION (2026-27)
MARKING KEY MATHEMATICS: SET 2

Class: IX
Date: 09-09-26
Admission no:

Time: 3hrs
Max Marks: 80
Roll no:

General instructions:

1. The Question paper contains- five sections A, B, C, D and E. Each section is compulsory. However, there are internal choices in some questions.
2. Section A has 18 MCQ's and 02 Assertion-Reason based questions of 1 mark each.
3. Section B has 5 very short (VSA)- type questions of 2 marks each.
4. Section C has 6 short (SA)- type questions of 3 marks each.
5. Section D has 4 long (LA)- type questions of 5 marks each.
6. Section E has 3 source based/case-based questions of 4 marks each

SECTION A — MCQs / ASSERTION-REASON

1. C | 2. D | 3. D | 4. C | 5. C | 6. D | 7. C | 8. D | 9. D | 10. C | 11. D | 12. B | 13. D | 14. D |
15. A | 16. D | 17. A | 18. D | 19. D | 20. D

SECTION B — 2M EACH

Q21. $\sqrt{144} = 12 \rightarrow$ Rational (1M); $3\sqrt{58} \rightarrow$ Irrational (1M)

Q22. $p(a)=0 \rightarrow a^3-a^3+2a+a-2=0 \rightarrow 3a-2=0 \rightarrow a=2/3$ (2M)

OR: $p(-1)=0 \rightarrow -1+m+4+2m-3=0 \rightarrow m=0$ (2M)

Q23. $a+b+90^\circ=180^\circ \rightarrow a+b=90^\circ$; $a:b=4:1 \rightarrow a=72^\circ$, $b=18^\circ \rightarrow$ vertically opposite $\rightarrow c=72^\circ$ (2M)

Q24. Sides 120,120,180 m; $s=210$ m (1M); Area= $\sqrt{(210 \times 90 \times 90 \times 30)}=2700\sqrt{7}$ m² (1M)

Q25. $A \equiv O \rightarrow$ circle cannot pass through centre $\rightarrow$ No valid x (2M)

OR: $(1+x)/2=3 \rightarrow x=5$ (2M)

SECTION C — 3M EACH

Q26. $6/(3\sqrt{2}-2\sqrt{3}) = 3\sqrt{2}+2\sqrt{3}$ (2M); compare with $3\sqrt{2}-a\sqrt{3} \rightarrow a=-2$ (1M)

Q27. $(x-3)^2-(x+3)^2=0 \rightarrow -12x=0 \rightarrow x=0$ (3M)

OR: $x^2+5x+6=(x+2)(x+3) \rightarrow x=-2,-3$ (3M)

Q28. DE||QR $\rightarrow \angle EAB + \angle RBA = 180^\circ$ (1M); bisectors $\rightarrow \angle PAB + \angle PBA = 90^\circ$ (1M); $\angle APB = 90^\circ$ (1M)

Q29. $h=\sqrt{(6^2-4^2)}=2\sqrt{5}$ cm (1M); Area= $\frac{1}{2} \times 8 \times 2\sqrt{5}=8\sqrt{5}$ cm² (2M)

Q30. $x-2y=3 \rightarrow x=3+2y$ (1M); substitute $\rightarrow y=-19/29$ (1M); $x=49/29$, $y=-19/29$ (1M)

Q31. $AB^2=106$, $BC^2=106$, $AC^2=212$ (2M); $AB=BC$ and $AB^2+BC^2=AC^2 \rightarrow$ Isosceles right triangle (1M)

OR: $mAB=mBC=3/2 \rightarrow A,B,C$ collinear (3M)

SECTION D — 5M EACH

Q32. $0.6 + 0.777... + 0.4777... = \frac{3}{5} + \frac{7}{9} + \frac{43}{90} = \frac{167}{90}$ (5M)

OR:

(a) $2^{-3} \times 4^2 \div 8^{-1} = 2^{-3} \times 2^4 \div 2^{-3} = 16$ (2M)

(b) $x^{-4}y^3 \div x^{-2}y^{-2} = x^{-2}y^5 = y^5/x^2$ (2M)

(c) $(3/5)^{-2} = (5/3)^2 = \frac{25}{9}$ (1M)

Q33. Let $A=x-3y$, $B=3y-4z$, $C=4z-x \rightarrow A+B+C=0$ (2M); $A^3+B^3+C^3=3ABC$ (1M) $\rightarrow 3(x-3y)(3y-4z)(4z-x)$ (2M)

Q34. $\angle PQR=35^\circ+55^\circ=90^\circ$ (3M); Reflex $\angle PQR=360^\circ-90^\circ=270^\circ$ (2M)

OR: (a) $\angle FOE=60^\circ$ (1M); (b) $\angle COB=60^\circ$ (2M); (c) $\angle DOE=60^\circ$ (2M)

Q35. Wheat: $s=400 \rightarrow \text{Area}=16000\sqrt{2} \text{ m}^2=1.6\sqrt{2} \text{ ha}$ (2M); second field: $s=480 \rightarrow \text{Area}=38400 \text{ m}^2=3.84 \text{ ha}$ (2M); median bisects $\rightarrow$ Potatoes=1.92 ha, Onions=1.92 ha (1M)

SECTION E — 4M EACH

Q36. (i) $s=(a+b+c)/2$ (1M); (ii) $s=19.5 \text{ m}$ (1M); (iii) $\text{Area} \approx 67.71 \text{ m}^2$ (1M); (iv) $67.71/2 \approx 33.85 \rightarrow 33 \text{ plants}$ (1M)

Q37. (a) Corresponding angle= 65° (1M); (b) Linear pair= $180^\circ-65^\circ=115^\circ$ (1M); (c) Alternate interior= 65° (1M); (d) unequal corresponding angles $\rightarrow$ roads not parallel (1M)

Q38. (a) $\Delta x=7$, $\Delta y=8$ (1M); (b) $AB=\sqrt{7^2+8^2}$ (1M); (c) $AB=\sqrt{113}$ units (1M); (d) $AC=8$ units, $CB=7$ units (1M)

*****ALL THE BEST*****