AL AMAL LEARNING CENTER

FBISE SSC-I Model Paper Pattern

MATHEMATICS CHAPTER QUIZ

Class 9 | Unit 1

REAL NUMBERS

Time Allowed: 1:00 hour **Total Marks:** 25

Roll Number	Paper Version

Candidate Sign. _____ Invigilator Sign. _____

SECTION A (Marks 10)

Note: Section A is compulsory. Fill the correct bubble for each question. Each question carries 0.5 mark.

Q#	Question	A	B	C	D
1.	In the radical expression $\sqrt[5]{(32x^{10})}$, the index and the radicand are:	Index 32, radicand 5	Index 5, radicand $32x^{10}$	Index 10, radicand 32x	Index 5, radicand x^{10}
2.	$\sqrt[3]{(54x^7y^9)}$ simplifies to:	$3x^2y^3\sqrt[3]{(2x)}$	$3xy^3\sqrt[3]{(2x^2)}$	$3x^2y^3\sqrt[3]{(2x^2)}$	$9x^2y^3\sqrt[3]{(2x)}$
3.	$\sqrt{3}\cdot\sqrt[3]{2}$ written as a single radical is:	$\sqrt[6]{6}$	$\sqrt[5]{6}$	$\sqrt[6]{108}$	$\sqrt[6]{36}$
4.	$\sqrt[4]{(81a^8b^4)}$ simplifies to:	$3a^4b$	$9a^2b$	$3a^2b^4$	$3a^2b$
5.	$\sqrt{(\sqrt[3]{x})}$ (a square root of a cube root) is equal to:	$\sqrt[5]{x}$	$\sqrt[6]{x}$	$\sqrt[9]{x}$	x^6
6.	$\sqrt[6]{(8x^3)}$ is equal to:	$\sqrt[3]{(2x)}$	$\sqrt{(8x)}$	$\sqrt{(2x)}$	$\sqrt[3]{(4x)}$
7.	$\sqrt[4]{(x^2y^6)}$ is equal to:	$\sqrt{(xy^3)}$	$\sqrt[3]{(xy^2)}$	$\sqrt{(x^2y^6)}$	$\sqrt[4]{(xy^3)}$
8.	$(27x^6)^{2/3}$ simplifies to:	$18x^4$	$9x^6$	$6x^4$	$9x^4$
9.	$(16x^8y^{-4})^{3/4}$ written with positive exponents is:	$8x^6y^3$	$8x^6 / y^3$	$12x^6 / y^3$	$4x^6 / y^3$
10.	$(a^{2/3}\cdot a^{1/2}) \div a^{1/6}$ simplifies to:	a	$a^{4/3}$	$a^{7/6}$	$a^{1/18}$
11.	$\sqrt[3]{(x\sqrt{x})}$ simplifies to:	x	$x^{3/2}$	$\sqrt{x}$	$\sqrt[3]{x}$
12.	$(8/27)^{-2/3}$ equals:	4/9	−4/9	2/3	9/4
Scenario for MCQs 13–16 A shoe factory has an asset of Rs. 1,500,000, of which 3/5 is the capital and the rest is the debt. (Asset = Capital + Debt)					
13.	What is the capital of the factory?	Rs. 600,000	Rs. 750,000	Rs. 900,000	Rs. 300,000
14.	What is the debt of the factory?	Rs. 600,000	Rs. 900,000	Rs. 300,000	Rs. 1,000,000
15.	What is the ratio of capital to debt?	2 : 3	3 : 2	3 : 5	5 : 3
16.	If the factory pays Rs. 150,000 of its debt, what debt remains?	Rs. 750,000	Rs. 150,000	Rs. 600,000	Rs. 450,000

Q#	Question	A	B	C	D
Scenario for MCQs 17–20 Hina is given the radical expression E = $\sqrt[6]{(64x^6y^{12})}$, where x and y are positive numbers.					
17.	What are the index and the radicand of E?	Index 6, radicand $64x^6y^{12}$	Index 64, radicand 6	Index 12, radicand $64x^6$	Index 6, radicand 64
18.	E written as an exponential expression is:	$64x^6y^{12}$	$(64x^6y^{12})^6$	$(64x^6y^{12})^{1/6}$	$(64x^6y^{12})^{-6}$
19.	E in its simplest form is:	$8xy^2$	$2xy^2$	$2x^6y^{12}$	$2xy$
20.	The value of E when x = 5 and y = 1 is:	5	25	2	10

SECTION B (3 × 3 = 9 Marks)

Note: Attempt all questions. Each question has an internal choice (OR).

Q1	Simplify completely: $\sqrt[4]{(48\,a^9\,b^5)}$	**3**	**OR**	Write $\sqrt{3} \cdot \sqrt[3]{2} \cdot \sqrt[4]{5}$ as a single radical.	**3**
Q2	Using the laws of exponents, simplify: $(2187\,a^5\,b^{17} / a^{12}\,b^3)^{1/7}$	**3**	**OR**	Simplify: $(81x^8)^{3/4} \div (8x^{-6})^{-1/3}$	**3**
Q3	Wajid drove 283.4 km on 16.2 litres of petrol and says he averaged about 1.75 km/L. Is his answer reasonable? Explain.	**3**	**OR**	The lowest temperature recorded at Vostok is −89.2°C. Convert it into Fahrenheit and Kelvin. (F = (9/5)C + 32, K = C + 273)	**3**

SECTION C (1 × 6 = 6 Marks)

Note: Attempt the question below. It has an internal choice (OR).

Q4	(a) Write $\sqrt[8]{(256\,a^8\,b^{16})}$ in exponential form and simplify. (b) Show that $\sqrt[6]{(x^4y^2)} = \sqrt[3]{(x^2y)}$. (c) Evaluate: $(81/16)^{3/4} \times (8)^{-1/3}$	**2+2+2**	**OR**	A company is penalized Rs. 480,000. Its shareholders Farah, Maryam and Tehreem invest in the ratio 1 : 2 : 3 and share the penalty in the same ratio. (a) Into how many equal parts is the penalty divided, and what is one part? (b) Find the penalty paid by Farah and by Maryam. (c) Find Tehreem's share and verify that the three shares add up to the penalty.	**2+2+2**

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