Negative Exponents & Scientific Notation (Grade 9)

EXAM-STYLE CLASS TEST

MARKS	DURATION	QUESTIONS
31	50 minutes	3

Name: ..... Class: .....

Date: .....

MARK ____ / 31

INSTRUCTIONS AND INFORMATION

1. Answer **ALL** the questions in this question paper.
2. Answer QUESTION 1 by **circling** the letter (A–D) in the answer grid at the end of that section.
3. Show **ALL** calculations clearly.
4. Show all units where applicable.
5. Number the answers correctly according to the numbering system used in this question paper.
6. A non-programmable calculator may be used, unless stated otherwise.
7. Write neatly and legibly.

QUESTION 1 [10 MARKS]

Four options are given as possible answers to the following questions. Choose the correct answer and circle the letter (A–D) in the grid at the end of this section. If you want to change your choice, put a cross through the wrong letter and circle your new choice.

1.1 $2^{-3} = \ldots$ (1)

A) -8 **B)** 8

C) $\frac{1}{8}$ **D)** -6

1.2 x^{-2} written with a positive exponent is ... (1)

A) $-2x$ **B)** $\frac{x^2}{1}$

C) $-x^2$ **D)** $\frac{1}{x^2}$

1.3 $0{,}000\,045$ written in scientific notation is ... (1)

A) $4{,}5 \times 10^{-5}$ **B)** $4{,}5 \times 10^{5}$

C) 45×10^{-6} **D)** $4{,}5 \times 10^{-4}$

1.4 $3{,}2 \times 10^{-3}$ written in full is ... (1)

A) $-3\,200$ **B)** $0{,}0032$

C) $0{,}32$ **D)** $3\,200$

1.5 $(2 \times 10^{3}) \times (4 \times 10^{2}) = \ldots$ (1)

A) $8 \times 10^{2{,}5}$ **B)** 8×10^{6}

C) 8×10^{5} **D)** 6×10^{5}

1.6 $\frac{6 \times 10^8}{3 \times 10^5} = \ldots$ (1)

A) $2 \times 10^{1,6}$ **B)** 3×10^3

C) 2×10^3 **D)** 2×10^{13}

1.7 Which one of the following is the SMALLEST? (1)

A) 3×10^{-2} **B)** 3×10^{-4}

C) 3×10^2 **D)** 3×10^0

1.8 $5^{-1} + 5^0 = \ldots$ (1)

A) 5 **B)** $\frac{1}{5}$

C) 0 **D)** $1\frac{1}{5}$

1.9 The mass of a dust particle is $7{,}5 \times 10^{-7}$ g. In grams that is ... (1)

A) 0,000 075 **B)** 0,000 000 75

C) 75 000 000 **D)** 0,000 007 5

1.10 $\frac{1}{x^{-3}} = \ldots$ (1)

A) x^3 **B)** $-3x$

C) $-x^3$ **D)** $\frac{1}{x^3}$

ANSWER GRID — CIRCLE YOUR ANSWERS FOR QUESTION 1

1.1	A	B	C	D
1.2	A	B	C	D
1.3	A	B	C	D
1.4	A	B	C	D
1.5	A	B	C	D
1.6	A	B	C	D
1.7	A	B	C	D
1.8	A	B	C	D
1.9	A	B	C	D
1.10	A	B	C	D

QUESTION 2 [9 MARKS]

Write the following in scientific notation.

2.1 Light travels about $9\ 460\ 000\ 000\ 000$ km in one year. Write this distance in scientific notation. **(3)**

2.2 Write $0{,}0000125$ in scientific notation. **(3)**

2.3 Write $3{,}04 \times 10^{-3}$ as an ordinary decimal number, and state which is larger: $3{,}04 \times 10^{-3}$ or $3{,}4 \times 10^{-4}$. **(3)**

QUESTION 3 [12 MARKS]

Calculate the following, leaving your answers in scientific notation.

3.1 $(2{,}4 \times 10^{5}) \times (3 \times 10^{3})$ **(4)**

3.2 $\dfrac{6 \times 10^{7}}{1{,}5 \times 10^{3}}$ **(4)**

3.3 The mass of a dust particle is $7{,}5 \times 10^{-7}$ g. Determine the total mass of $2\ 000$ identical dust particles. Give your answer in scientific notation. **(4)**

TOTAL: 31 marks

This question paper consists of 3 questions.

© Danemathics — free to print and share for classroom use.