```javascript
//Ver4.0 - Polynomial Quiz Application (script.js)

    const quizData=[
        {
        "question": "Which of the following is a fundamental quantity?",
        "options": ["Velocity", "Force", "Mass", "Energy"],
        "correct": [2],
        "explanation": "Mass is a fundamental quantity. Others are derived from it.",
        "type": "singleSelect"
    },
    {
        "question": "What is the SI unit of luminous intensity?",
        "options": ["Candela", "Lux", "Lumen", "Watt"],
        "correct": [0],
        "explanation": "Candela is the SI unit of luminous intensity.",
        "type": "singleSelect"
    },
    {
        "question": "Which of the following is not a derived quantity?",
        "options": ["Length", "Speed", "Acceleration", "Momentum"],
        "correct": [0],
        "explanation": "Length is a base physical quantity.",
        "type": "singleSelect"
    },
    {
        "question": "What is the dimensional formula for force?",
```

"options": ["[M L T^{-2}]", "[M L T^{-1}]", "[M L^{2} T^{-2}]", "[M L T^{-3}]"],

"correct": [0],

"explanation": "Force = mass × acceleration, so its dimension is [M L T^{-2}].",

"type": "singleSelect"

},

{

"question": "Which of the following is a scalar quantity?",

"options": ["Velocity", "Force", "Energy", "Displacement"],

"correct": [2],

"explanation": "Energy has magnitude but no direction.",

"type": "singleSelect"

},

{

"question": "What is the SI unit of electric current?",

"options": ["Volt", "Ampere", "Ohm", "Coulomb"],

"correct": [1],

"explanation": "Ampere is the base unit of electric current.",

"type": "singleSelect"

},

{

"question": "Which of the following is a dimensionless quantity?",

"options": ["Refractive index", "Force", "Velocity", "Energy"],

"correct": [0],

"explanation": "Refractive index is the ratio of two speeds and hence dimensionless.",

"type": "singleSelect"

```
  },
  {
    "question": "What is the SI unit of temperature?",
    "options": ["Kelvin", "Celsius", "Fahrenheit", "Rankine"],
    "correct": [0],
    "explanation": "Kelvin is the SI base unit for temperature.",
    "type": "singleSelect"
  },
  {
    "question": "Which of the following has the dimensional formula [M L^2 T^-2]?",
    "options": ["Energy", "Force", "Momentum", "Power"],
    "correct": [0],
    "explanation": "Energy or work = force × displacement = [M L^2 T^-2].",
    "type": "singleSelect"
  },
  {
    "question": "What is the SI unit of frequency?",
    "options": ["Hertz", "Second", "Meter", "Newton"],
    "correct": [0],
    "explanation": "Hertz (Hz) is the number of cycles per second.",
    "type": "singleSelect"
  },
  {
    "question": "Which of the following is a vector quantity?",
    "options": ["Mass", "Speed", "Velocity", "Temperature"],
    "correct": [2],
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    "explanation": "Velocity has both magnitude and direction.",

    "type": "singleSelect"

  },

  {

    "question": "What is the dimensional formula for pressure?",

    "options": ["[M L^-1 T^-2]", "[M L T^-2]", "[M L^2 T^-2]", "[M L^-2 T^-2]"],

    "correct": [0],

    "explanation": "Pressure = force / area = [M L T^-2] / [L^2] = [M L^-1 T^-2].",

    "type": "singleSelect"

  },

  {

    "question": "Which of the following is a derived unit?",

    "options": ["Meter", "Kilogram", "Newton", "Second"],

    "correct": [2],

    "explanation": "Newton is derived from kg·m/s².",

    "type": "singleSelect"

  },

  {

    "question": "What is the dimensional formula for velocity?",

    "options": ["[M L T^-1]", "[L T^-1]", "[L T^-2]", "[M L^2 T^-2]"],

    "correct": [1],

    "explanation": "Velocity = displacement/time = [L]/[T] = [L T^-1].",

    "type": "singleSelect"

  },

  {

    "question": "Which of the following is a fundamental unit?",
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```
    "options": ["Joule", "Meter", "Watt", "Pascal"],

    "correct": [1],

    "explanation": "Meter is a base unit; others are derived.",

    "type": "singleSelect"

 },

 {

    "question": "Which physical quantity has the dimensional formula [M^0 L^0 T^0]?",

    "options": ["Strain", "Energy", "Power", "Force"],

    "correct": [0],

    "explanation": "Strain is a ratio of similar quantities and hence dimensionless.",

    "type": "singleSelect"

 },

 {

    "question": "What is the SI unit of luminous flux?",

    "options": ["Lumen", "Candela", "Lux", "Watt"],

    "correct": [0],

    "explanation": "Lumen is the SI unit of luminous flux.",

    "type": "singleSelect"

 },

 {

    "question": "Which derived unit corresponds to [kg·m²/s³]?",

    "options": ["Watt", "Joule", "Pascal", "Volt"],

    "correct": [0],

    "explanation": "Watt is the unit of power and equals kg·m²/s³.",

    "type": "singleSelect"

 },
```

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{

  "question": "Which of the following is NOT a base quantity?",

  "options": ["Temperature",  "Electric current", "Momentum", "Length"],

  "correct": [2],

  "explanation": "Momentum is a derived quantity.",

  "type": "singleSelect"

},

{

  "question": "What is the SI unit of solid angle?",

  "options": ["Steradian", "Radian", "Degree", "Candela"],

  "correct": [0],

  "explanation": "Steradian is the unit of solid angle.",

  "type": "singleSelect"

},

{

  "question": "Which of the following is an example of a vector quantity?",

  "options": ["Torque",  "Speed", "Time", "Energy"],

  "correct": [0],

  "explanation": "Torque has both magnitude and direction.",

  "type": "singleSelect"

},

{

  "question": "What is the dimensional formula for surface tension?",

  "options": ["[M T^-2]", "[M L^0 T^-2]", "[M T^-1]", "[M L^-1 T^-2]"],

  "correct": [3],

  "explanation": "Surface tension = force/length ⇒ [M L T^-2]/[L] = [M L^-1 T^-2].",
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"type": "singleSelect"

},

{

  "question": "Which fundamental quantity is used to derive angular velocity?",

  "options": ["Time", "Length", "Mass", "Current"],

  "correct": [0],

  "explanation": "Angular velocity is measured as angle per unit time.",

  "type": "singleSelect"

},

{

  "question": "The unit 'Newton-second' is used to measure:",

  "options": ["Impulse", "Momentum", "Power", "Energy"],

  "correct": [0],

  "explanation": "Impulse = force × time, and is measured in Newton-seconds.",

  "type": "singleSelect"

},

{

  "question": "What is the dimension of Planck's constant (h)?",

  "options": ["[M L^2 T^-1]", "[M L^2 T^-2]", "[M L T^-2]", "[M L^-2 T]"],

  "correct": [0],

  "explanation": "Planck's constant links energy and frequency: E = hv.",

  "type": "singleSelect"

},

{

  "question": "Which pair is correctly matched?",

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    "options": ["Magnetic flux - Weber", "Electric current - Volt", "Force - Watt", "Work -
Coulomb"],

    "correct": [0],

    "explanation": "Weber is the SI unit of magnetic flux.",

    "type": "singleSelect"

  },

  {

    "question": "Which term has the dimensional formula [M^0 L T^-1]?",

    "options": ["Angular velocity", "Acceleration", "Speed", "Strain"],

    "correct": [0],

    "explanation": "Angular velocity has dimension of angle/time, where angle is
dimensionless.",

    "type": "singleSelect"

  },

  {

    "question": "Which unit is a measure of energy?",

    "options": ["Joule", "Watt", "Ampere", "Newton"],

    "correct": [0],

    "explanation": "Joule is the unit of work or energy.",

    "type": "singleSelect"

  },

  {

    "question": "Which is a pair of base quantities in SI?",

    "options": ["Temperature, Current", "Energy, Power", "Force, Time", "Pressure, Length"],

    "correct": [0],

    "explanation": "Temperature (K) and electric current (A) are base quantities.",

    "type": "singleSelect"
```

```
      },
      {
        "question": "Which of the following expresses derived units only?",

        "options": ["Newton, Joule, Watt", "Meter, Second, Kelvin", "Ampere, Candela, Mole",
"Kilogram, Meter, Second"],

        "correct": [0],

        "explanation": "All are derived from base units.",

        "type": "singleSelect"

      }

    ];


function loadQuiz() {

    const quizContainer = document.getElementById("quiz");

    quizData.forEach((q, index) => {

        let questionHTML = `<p>${index + 1}. ${q.question}</p>`;

        q.options.forEach((option, i) => {

            questionHTML += `<input type="radio" name="question${index}" value="${i}"> ${option}
<br>`;

        });

        quizContainer.innerHTML += questionHTML + "<br>";

    });

}


function submitQuiz() {

    let score = 0;

    let userResponses = [];

    let explanationHTML = `<h2>Explanations:</h2>`;
```

```javascript
    quizData.forEach((q, index) => {

        const selectedOption =
document.querySelector(`input[name="question${index}"]:checked`);

        if (selectedOption) {

            userResponses.push({ question: q.question, selected: q.options[selectedOption.value],
correct: q.options[q.correct], explanation: q.explanation });


            if (parseInt(selectedOption.value) === q.correct) {

                score++;

                selectedOption.parentElement.classList.add("correct");

            } else {

                selectedOption.parentElement.classList.add("incorrect");

            }


            explanationHTML += `<p><strong>${index + 1}. ${q.question}</strong><br>

                        Your correct: ${q.options[selectedOption.value]}<br>

                        Correct correct: ${q.options[q.correct]}<br>

                        Explanation: ${q.explanation}</p>`;

        }

    });


    document.getElementById("result").innerHTML = `You scored ${score} out of
${quizData.length}!`;

    document.getElementById("explanation").innerHTML = explanationHTML;


    localStorage.setItem("quizResults", JSON.stringify({ score, userResponses }));
```

```javascript
}

function generatePDF() {
    const { jsPDF } = window.jspdf;
    const doc = new jsPDF();


    const quizResults = JSON.parse(localStorage.getItem("quizResults"));
    let y = 20;


    doc.setFont("helvetica", "bold");
    doc.setFontSize(18);
    doc.text("Physical World and Measurement Quiz Results", 20, 10);


    doc.setFontSize(14);
    doc.text(`Score: ${quizResults.score} / ${quizData.length}`, 20, y);
    y += 10;


    quizResults.userResponses.forEach((response, index) => {
        doc.setFontSize(12);
        doc.text(`${index + 1}. ${response.question}`, 10, y);
        y += 7;
        doc.text(`Your correct: ${response.selected}`, 10, y);
        y += 5;
        doc.text(`Correct correct: ${response.correct}`, 10, y);
        y += 5;
        doc.text(`Explanation: ${response.explanation}`, 10, y);
```

```javascript
      y += 10;

    });


    doc.save("quiz_results.pdf");
}


window.onload = loadQuiz;
```