```
BEGIN PROGRAM

    FUNCTION generate_question(level):

      IF level = "easy" THEN

         num_range ← (1, 10)

      ELSE IF level = "medium" THEN

         num_range ← (1, 20)

      ELSE

         num_range ← (1, 50)


      num1 ← RANDOM number in num_range

      num2 ← RANDOM number in num_range

      operator ← RANDOM choice from ["+", "-", "*"]


      IF operator = "-" AND num2 > num1 THEN

         SWAP num1, num2   // ensure positive answer

      END IF


      question ← num1 + operator + num2

      answer ← EVALUATE(question)


      RETURN question, answer

    END FUNCTION



    FUNCTION ask_question(question, answer):
```

```
DISPLAY "What is question?"

start_time ← CURRENT TIME


TRY

    user_answer ← INPUT as INTEGER

CATCH error

    DISPLAY "Invalid input! Marked as incorrect."

    RETURN 0 points, None, CURRENT TIME - start_time


end_time ← CURRENT TIME

time_taken ← end_time - start_time


IF user_answer = answer THEN

    IF time_taken ≤ 5 THEN

        points ← 2

    ELSE

        points ← 1

    END IF

    DISPLAY "Correct! +points, time_taken seconds"

ELSE

    points ← 0

    DISPLAY "Incorrect! The correct answer was answer"

END IF


RETURN points, user_answer, time_taken
END FUNCTION
```

```
FUNCTION maths_test():

    DISPLAY "=== Welcome to the Maths Test ==="

    DISPLAY "Choose difficulty: 1) Easy  2) Medium  3) Hard"


    REPEAT

        choice ← INPUT

        IF choice = "1" THEN

            difficulty ← "easy"

            total_questions ← 5

            BREAK

        ELSE IF choice = "2" THEN

            difficulty ← "medium"

            total_questions ← 10

            BREAK

        ELSE IF choice = "3" THEN

            difficulty ← "hard"

            total_questions ← 15

            BREAK

        ELSE

            DISPLAY "Invalid input, enter 1, 2 or 3"

    UNTIL valid choice chosen


    DISPLAY "You selected difficulty mode! Let's begin..."
```

```
    total_score ← 0

    results ← EMPTY LIST


    FOR q FROM 1 TO total_questions DO

        question, answer ← generate_question(difficulty)

        DISPLAY "Question q of total_questions"

        points, user_answer, time_taken ← ask_question(question, answer)

        total_score ← total_score + points

        APPEND (question, answer, user_answer, points, time_taken) TO results

    END FOR


    // --- Summary ---

    DISPLAY "=== Test Completed ==="

    DISPLAY "Final Score: total_score / (total_questions * 2)"

    percentage ← ROUND((total_score / (total_questions * 2)) * 100, 2)

    DISPLAY "Percentage: percentage %"


    DISPLAY "Question Breakdown"

    DISPLAY "Q#   Question   Your Ans   Correct Ans   Points   Time(s)"

    FOR EACH record IN results DO

        DISPLAY record

    END FOR

END FUNCTION


CALL maths_test()
```

END PROGRAM