SAMPEL PERCUMA

Skema Jawapan Trial STPM Fizik Semester 1

Set penuh: Kertas Percubaan STPM

Sem 1 · Fizik

Sampel ini: 4 muka surat. Set penuh ada:

- 2 fail PDF
- Semester 1: kertas percubaan (trial) negeri, subjek yang dipilih + skema
- Blueprint 30 hari Semester 1 (setiap subjek)
- Semester 3: percubaan 2024, 10 subjek, banyak negeri, soalan + skema dalam satu fail

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Sampel bermula di muka surat sebelah

Name :..... **I/C :.....**

SEMESTER 1

960/1 **STPM 2022**

JABATAN PENDIDIKAN NEGERI KELANTAN

SIJIL TINGGI PERSEKOLAHAN MALAYSIA

PHYSICS 1 (FIZIK 1)

One and a half hours (Satu jam setengah)

Instructions to candidates:

DO NOT OPEN THIS QUESTIONS PAPER UNTIL YOU ARE TOLD TO DO SO.

There are **fifteen** *questions in Section A. For each questions, four choices of answers are given. Choose* **one** *correct answer and indicate it on the Multiple-choice Answer Sheet provided. Read the instructions on the Multiple-choice Answer Sheet very carefully. Answer* **all** *questions. Marks will not be deducted for wrong answers.*
Answer **all** *questions in Section B. Write your answers in the spaces provided.*

Answer any **two** *questions in Section C. All essential working should be shown. For numerical answers, unit should be quoted wherever appropriate. Begin each answer on a fresh sheet of paper and arrange your answers in numerical order.*

Tear off the front page of this question paper in your answer sheets of Section B, and tie both of them together with your answer sheets in Section C.

Values of constant are provided.
Answers may be written in either English or Bahasa Malaysia

For examiner's use (Untuk kegunaan pemeriksa)	
Section A (Bahagian A)	
Section B (Bahagian B)	
16	
17	
Section C (Bahagian C)	
Total (Jumlah)	

This question paper consists of printed pages and 0 blank pages.
(Kertas soalan ini terdiri daripada 12 halaman bercetak dan 0 halaman kosong.)

Section A

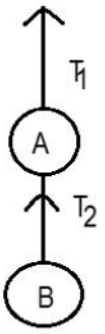
Answer **all** *questions in Section A*

1. The graph is plotted on the x-axis and the y-axis, to obtain straight line graphs from the equation $I = \frac{1}{2}M(R_1^2 + R_2^2)$,where R_1 and M are constants, if values are known for the variables and the graph is to be used to find the constants. What is the gradient and y-intercept of the graph?

	Gradient	y-intercept
A	$\frac{1}{2}MR_1^2$	$\frac{1}{2}MR_2^2$
B	$\frac{1}{2}MR_2^2$	$\frac{1}{2}MR_1^2$
C	$\frac{1}{2}M$	$\frac{1}{2}MR_2^2$
D	$\frac{1}{2}M$	$\frac{1}{2}MR_1^2$

2. An object which is moving vertically upwards passes through a point x at height 70 cm from the ground with speed 3.5 m s^{-1}. Determine the initial velocity of the object when it is launched from the ground

   A 4.15 m s^{-1} B 5.10 m s^{-1} C 17.23 m s^{-1} D 25.98 m s^{-1}

3. 

   Mass A is 15 kg and mass B is 11 kg. If they are given an upward acceleration of 3 m s^{-2} by pulling up on A, find the resultant force of the system.

   A 33N B 78N C 141N D 333N

Section C

Answer any **two** *questions in Section C.*

18 (a) Define *acceleration.*

[1 mark]

(b) A stone is thrown vertically upwards at the same time as another stone is dropped from a height h_0 directly above the first stone. If the initial velocity of the first stone is u, find an expression for time t when they meet. If the two stones were to have the same speed at the time they meet, express u in terms of h_0.

[4 marks]

(c) In order to check the time for which a camera shutter stays open, a metal sphere is photographed as it is released from rest. It is noted that the sphere falls *2.0 m* before the shutter opens. If the ball falls *0.15 m* while the shutter was open, calculate

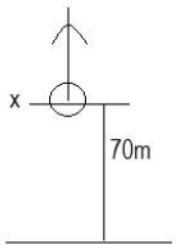
(i) the speed of the ball after falling *2.0 m*

[1 mark]

(ii) the period the shutter was open.

[2 marks]

Answer STPM2022 Percubaan
Section A

<table>
<tr><td>1.</td><td>D</td><td>Rearrange the equation to $I = \frac{1}{2}MR_2^2 + \frac{1}{2}MR_1^2$ where I and R_1 are the variable, then compare them with $y = mx + c$</td></tr>
<tr><td>2.</td><td>B</td><td>

<table>
<tr><td>s</td><td>u</td><td>v</td><td>a</td><td>t</td></tr>
<tr><td>0.7</td><td>?</td><td>3.5</td><td>-g</td><td>x</td></tr>
</table>
Eq no. 4 ($v^2=u^2+2as$)
u =5.10ms^{-1}</td></tr>
<tr><td>3.</td><td>B</td><td>Apply NSL on RHS
Number of mass = 2,
Total mass of the system = $m_1 + m_2$
Common ,a = 3
$ma = (m_A + m_B)a = 78N$</td></tr>
<tr><td>4.</td><td>A</td><td>Energy output + initial K.E = final K.E + P.E</td></tr>
<tr><td>5.</td><td>D</td><td>The tension in the string enables the mass to move in a circular path.</td></tr>
<tr><td>6.</td><td>A</td><td>$F = kx = 40(0.35 - 0.30) = 2.0\ N$
$F = \frac{mv^2}{r}$
$v = \sqrt{\frac{2(0.35)}{0.025}} = 5.29\ m\ s^{-1}$</td></tr>
<tr><td>7.</td><td>C</td><td>$g_1 = \frac{2Gm}{(2r)^2} = \frac{Gm}{2r^2}$ $\quad g_2 = \frac{4Gm}{(r)^2}$
$g_2 - g_1 = \frac{7Gm}{2r^2}$</td></tr>
<tr><td>8.</td><td>B</td><td>$\Delta U = U_2 - U_1$
$= -(6.67\ x\ 10^{-11})(6.0\ x\ 10^{24})(60)\left[\frac{1}{(6.4+0.50)x10^6} - \frac{1}{(6.4+0.70)x10^6}\right]$
$= -9.80\ x\ 10^7\ J$</td></tr>
</table>

TAMAT SAMPEL

Suka sampel ini?

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