

Essay {Paper03}

[SPM06-02]

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|-----|--|-------------------|------------------------------------|
| (a) | To compare the elasticity of vulcanized and unvulcanized rubber. | | |
| (b) | Manipulated variable : Vulcanized rubber and unvulcanized rubber Responding variable : Change in length of rubber strip Fixed variable : Length (size) of rubber strip, mass of weight | | |
| (c) | Vulcanized rubber is more elastic than unvulcanized rubber. | | |
| (d) | Substances : Vulcanized rubber strip, unvulcanized rubber strip Apparatus : Retort stand and clamps, Bulldog clips, metre rule, 50 g weight | | |
| (e) | <ol style="list-style-type: none"> 1. Measured 10 cm of natural rubber 2. Hang natural rubber strips using bulldog clips and clamp it at retort stand 3. measured the initial length of natural rubber 4. Hang a 10 g weight to the end of natural rubber and recorded the length of natural rubber 5. remove the weight and measured the length of natural rubber 6. Repeat steps 1 to 5 for vulcanised rubber. | | |
| (f) | Tabulation of data | | |
| | | Initial length/cm | Length with weight/cm |
| | Vulcanized rubber | | Length after removal of weight/ cm |
| | Natural rubber | | |

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[SPM04-03]

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|-----|--|
| (a) | To prepare two different types of ester using the same carboxylic acid with different alcohols and describe their scents . |
| (b) | Different alcohol produces different ester . |
| (c) | Methanol, ethanol, butanoic acid, concentrated sulphuric acid. Apparatus Measuring cylinder, test tubes, beakers, round bottom flask, Bunsen burner, dropper, retort stand, test tube holder, condenser Liebig |
| (d) | <ol style="list-style-type: none"> 1. Using a measuring cylinder, 25 cm³ of methanol and 50 cm³ of butanoic acid is separately measured and poured into a round bottom flask. 2. The mixture is then stirred. 3. Using a dropper, 10 drops of concentrated sulphuric acid is added and the apparatus is set up for reflux. 4. The mixture is then heated under reflux. 5. Ester is collected in a conical flask, smelled and its scent recorded. 6. Step 1 to step 5 is repeated by replacing methanol with ethanol while butanoic acid is used in both experiments. |

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|-----|---------|-----------------|-------|
| (e) | Alcohol | Carboxylic acid | Scent |
| | | | |
| | | | |

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[MRSMTrial06-03]

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|-----|--|-------------------|------------------------------------|
| (a) | Does the vulcanized and unvulcanized rubber influence its elasticity? | | |
| (b) | Manipulated variable : Vulcanized rubber and unvulcanized rubber Responding variable : Change in length of rubber strip Fixed variable : Length (size) of rubber strip, mass of weight | | |
| (c) | Vulcanized rubber is more elastic than unvulcanized rubber. | | |
| (d) | Substances : Vulcanized rubber strip, unvulcanized rubber strip Apparatus : Retort stand and clamps, Bulldog clips, metre rule, 50 g weight | | |
| (e) | 1. Measured 10 cm of natural rubber 2. Hang natural rubber strips using bulldog clips and clamp it at retort stand 3. measured the initial length of natural rubber 4. Hang a 10 g weight to the end of natural rubber and recorded the length of natural rubber 5. remove the weight and measured the length of natural rubber 6. Repeat steps 1 to 5 for vulcanised rubber. | | |
| (f) | Tabulation of data | | |
| | | Initial length/cm | Length with weight/cm |
| | Vulcanized rubber | | Length after removal of weight/ cm |
| | Natural rubber | | |

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[SBPTrial06-03] {Translate}

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|---|--|------|
| (a) | | |
| Penerangan | | Skor |
| [Dapat menyatakan tujuan eksperimen dengan tepat] Contoh jawapan Mengkaji sifat kekenyalan getah ter Vulkan dengan getah tak ter Vulkan | | 3 |
| [Dapat menyatakan tujuan eksperimen dengan kurang tepat] Contoh jawapan Adakah getah ter Vulkan lebih kenyal berbanding dengan getah tak ter Vulkan // Membandingkan kekenyalan getah ter Vulkan dan getah tak ter Vulkan | | 2 |
| [Dapat menyatakan idea tujuan eksperimen] Contoh jawapan Mengkaji kekenyalan getah | | 1 |
| Tidak memberi respon atau respon salah | | 0 |

(b)

| Penerangan | Skor |
|--|------|
| [Dapat menyatakan kesemua pembolehubah dengan tepat] Contoh jawapan Pemboleh ubah yang dimanipulasikan: Jenis getah // Getah tervulkan dan getah tak tervulkan Pemboleh ubah yang bergerakbalas : Pemanjangan getah // sifat kekenyalan Pemboleh ubah yang dimalarkan : Pemberat // saiz/ panjang jalur getah | 3 |
| [Dapat memberikan mana-mana dua pembolehubah dengan tepat] | 2 |
| [Dapat memberikan mana-mana satu pembolehubah dengan tepat] | 1 |
| Tidak memberi respon atau respon salah | 0 |

(c)

| Penerangan | Skor |
|--|------|
| [Dapat menyenaraikan semua bahan dan radas dengan betul] Contoh jawapan Senarai bahan Jalur getah tervulkan, jalur getah tak tervulkan Senarai radas Pembaris, klip, pemberat [10, 20, 50, 100] g, kaki retort dengan pengapit, benang | 3 |
| [Dapat menyenaraikan bahan dan radas asas dengan betul] Contoh jawapan Jalur getah tervulkan dan tak tervulkan, pemberat, kaki retort, pembaris | 2 |
| [Dapat memberikan idea radas dan bahan untuk eksperimen dengan betul] Mana-mana satu bahan dan satu radas | 1 |
| Tidak memberi respon atau respon salah | 0 |

(d)

| Penerangan | Skor |
|---|------|
| [Dapat menyatakan semua 5 langkah eksperimen dengan betul] Contoh jawapan 1. Gantungkan jalur getah tervulkan dan jalur getah tak tervulkan yang sama saiz pada kaki retort secara berasingan 2. Ukur panjang asal setiap jalur getah 3. Gantungkan pemberat 10 g pada setiap jalur getah dan ukur panjang jalur getah yang dihasilkan 4. Pemberat ditanggalkan dan jalur getah diukur sekali lagi 5. Ulang langkah 3 dan 4 menggunakan pemberat [20 g, 30g, 40 g, dan seterusnya sehingga 100 g] secara bergilir menggantikan pemberat 10 g | 3 |
| [Dapat menyatakan langkah 2,3 dan 5 untuk menjalankan eksperimen] | 2 |
| [Dapat menyatakan 2 langkah minimum yang betul] | 1 |
| Tidak memberi respon atau respon salah | 0 |

(e)

| Penerangan | | Skor | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|-----------------|------|-------------|-----------------|---------------------|--|--|---------------------|--|--|--|--------------|--|--|--|--|--|--|--|--|-------------------|--|--|--|--|--|--|--|--|-------------------------------|--|--|--|--|--|--|--|--|------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| [Dapat merancang jadual dan menunjukkan penjadualan data dengan betul yang mengandungi perkara-perkara berikut] - Mempunyai lajur dan baris - mempunyai tajuk dan berunit Contoh jawapan | | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <thead> <tr> <th>Jenis getah</th> <th colspan="4">Getah tervulkan</th> <th colspan="4">Getah tak tervulkan</th> </tr> </thead> <tbody> <tr> <td>Pemberat (g)</td> <td></td><td></td><td></td><td></td> <td></td><td></td><td></td><td></td> </tr> <tr> <td>Panjang asal (cm)</td> <td></td><td></td><td></td><td></td> <td></td><td></td><td></td><td></td> </tr> <tr> <td>Panjang selepas diregang (cm)</td> <td></td><td></td><td></td><td></td> <td></td><td></td><td></td><td></td> </tr> <tr> <td>Pemanjangan (cm)</td> <td></td><td></td><td></td><td></td> <td></td><td></td><td></td><td></td> </tr> <tr> <td>Panjang selepas pemberat ditanggalkan (cm)</td> <td></td><td></td><td></td><td></td> <td></td><td></td><td></td><td></td> </tr> </tbody> </table> | | | Jenis getah | Getah tervulkan | | | | Getah tak tervulkan | | | | Pemberat (g) | | | | | | | | | Panjang asal (cm) | | | | | | | | | Panjang selepas diregang (cm) | | | | | | | | | Pemanjangan (cm) | | | | | | | | | Panjang selepas pemberat ditanggalkan (cm) | | | | | | | | |
| Jenis getah | Getah tervulkan | | | | Getah tak tervulkan | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pemberat (g) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Panjang asal (cm) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Panjang selepas diregang (cm) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pemanjangan (cm) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Panjang selepas pemberat ditanggalkan (cm) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| [Dapat merancang jadual dan menunjukkan penjadualan data yang mengandungi perkara-perkara berikut] - Mempunyai lajur dan baris - Mempunyai tajuk tanpa unit | | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| [Idea menunjukkan penjadualan data dengan kurang tepat] - Minimum 2 lajur/baris | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Tidak memberi respon atau respon salah | | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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