



MINISTRY OF EDUCATION, SINGAPORE  
in collaboration with  
CAMBRIDGE ASSESSMENT INTERNATIONAL EDUCATION  
General Certificate of Education Normal (Technical) Level

## COMPUTER APPLICATIONS

**7018/03**

Paper 3

**For examination from 2022**

SPECIMEN PAPER

**1 hour 30 minutes**

Additional Materials:

- Electronic version of BANG.wav file
- Electronic version of CAR.png file
- Electronic version of CAR1.jpg file
- Electronic version of CAR2.jpg file
- Electronic version of CAR3.jpg file
- Electronic version of CAR4.jpg file
- Electronic version of CARMOVIE.mov file
- Electronic version of CARMUSIC.wav file
- Electronic version of CHEER.wav file
- Electronic version of FIELD.svg file
- Electronic version of SOLARPOWER.xlsx file
- Electronic version of SUN.sprite2 file

### READ THESE INSTRUCTIONS FIRST

Answer **all** questions.

Save your work using the file name given in the question as and when necessary.

The number of marks is given in brackets [ ] at the end of each question or part question.

This document consists of **5** printed pages and **1** blank page.



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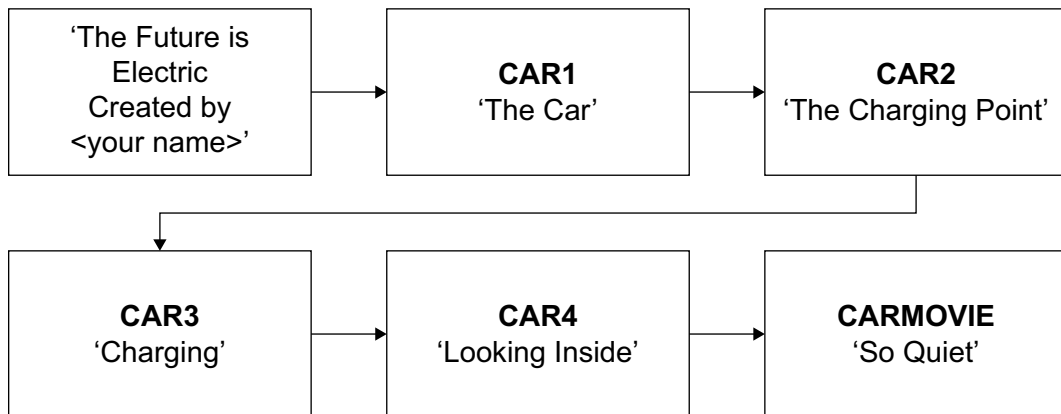
### Task 1 Media Elements [14 marks]

#### Create Video:

You are required to create a short video about electric cars. You are provided with the following files in your folder:

- **CAR1**
- **CAR2**
- **CAR3**
- **CAR4**
- **CARMOVIE**
- **CARMUSIC**

1 Create a video using the following storyboard. The files and text are shown below:



[3]

2 Include 6 frames with duration of 4 seconds each, for frames 1–5. [2]

3 Format the title as yellow text, 52 point in the first frame. [2]

4 Add a transition between each frame. Set the duration of each transition to 0.5 seconds. [2]

5 Trim the **CARMOVIE** video to 9 seconds long. [1]

6 Add the audio **CARMUSIC** as the soundtrack for frames 1–5 only. [2]

7 Export your work in **mp4** format as:

**MyCarVideo\_<Your Name>\_<Centre Number>\_<Index Number>**

Make sure that the output video is less than 5 MB in size. [2]

## Task 2 Spreadsheet [28 marks]

### Scenario:

Solar panels are used to charge an electric car. The car can only be charged when the solar panel reading is over 2 Kilowatt Hours (KWH). There needs to be 6 or more hours available for a full charge. First, you are required to finish setting up the spreadsheet to record the solar panel readings for a week by using **functions and mathematical operators to find the required data values**. Then you will need to set up a chart to show a summary of the average readings for each hour of the day over a week.

### Finish setting up the spreadsheet:

- 8 Open the file **SOLARPOWER**. You will see the following data.  
Save the file as: **MYSP\_<Your Name>\_<Centre Number>\_<Index Number>** [1]

	A	B	C	D	E	F	G	H	I	J	K	
1	<b>Solar Panel Ouput in KWH</b>											
2		Day										
3	Time	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Average	Median	Range	
4												
5	7:00	1.9	1.8	1.6	2	1.4	1.3	1.7				
6	8:00	2.3	2.2	2.1	2.4	2.3	1.9	2				
7	9:00	2.7	2.5	2.6	2.7	2.5	2.6	2.5				
8	10:00	2.9	2.8	2.9	2.7	2.9	2.8	2.4				
9	11:00	2.2	3	2.8	2.8	2.9	2.9	2.2				
10	12:00	2.6	2.9	3	3	2.9	3	1.9				
11	13:00	2.5	3	3	2.2	3	2.9	1.4				
12	14:00	2.7	2.9	2.8	1.9	2.7	2.2	0.7				
13	15:00	1.9	2.5	2.9	0.4	2.4	0.9	1				
14	16:00	0.5	2.2	1	0.5	2.2	0.8	0.9				
15	17:00	1.8	1.9	1.2	1.8	1.9	1.7	1				
16	18:00	0.7	0.9	0.8	1	0.6	0.8	0.5				
17												

- 9 In cell **I5** enter a formula to find the average reading at 7:00. [1]
- 10 In cell **J5** enter a formula to find the median of the 7:00 readings. [1]
- 11 In cell **K5** enter a formula to calculate the range (max – min) of readings for 7:00. [1]
- 12 Copy these formulas to calculate all the values for columns **I, J** and **K**. [2]
- 13 Format all the readings and calculations to one decimal place. [2]
- 14
- In cell **A18** enter the text 'Hours Available for Charge'.
  - In cell **A19** enter the text 'Full Charge Available'.
  - Format both cells as bold with text wrap. [3]

15 Format the cells, **B5** to **H16**, to automatically show red text if the value is less than 2 and green text otherwise. [3]

- 16
- In cell **B18** enter a formula to find the number of readings showing 2KWH or more, on Monday.
  - In cell **B19** enter a formula to display 'Yes' if there are 6 or more readings on Monday and 'No' otherwise.
  - Copy these formulas for all the days in the week. [4]

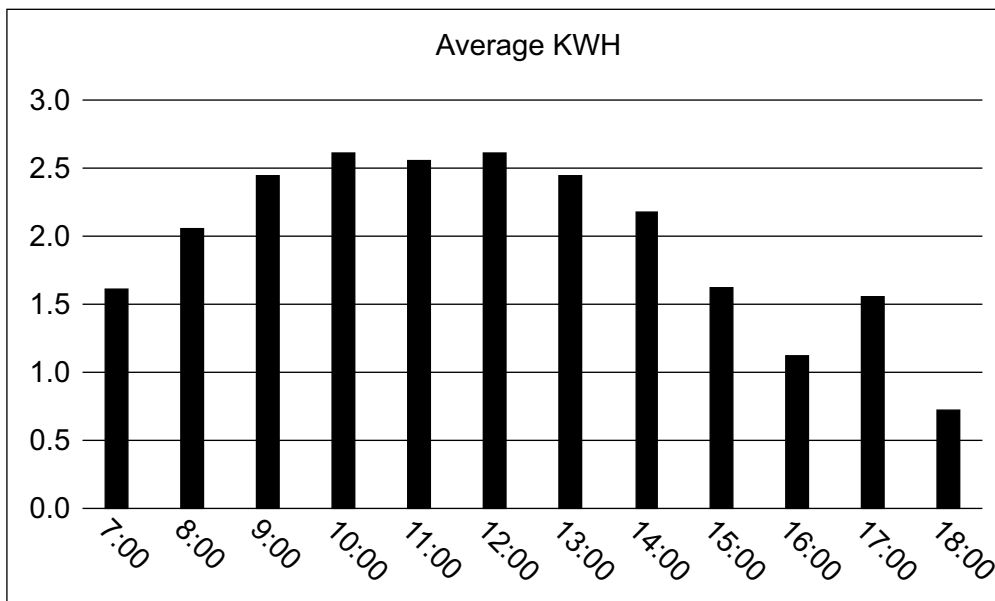
17 To allow only numbers between 0 and 3 (both inclusive) to be entered in each of the cells, **B5** to **H16**, add: [4]

- validation
- an appropriate error message.

18 Save your file.

### Set up the Summary of Average Readings Chart:

19 Use the data from **Average** and **Time** to create the chart shown below.



[6]

20 Save your file as: **MYSP\_Chart\_<Your Name>\_<Centre Number>\_<Index Number>**

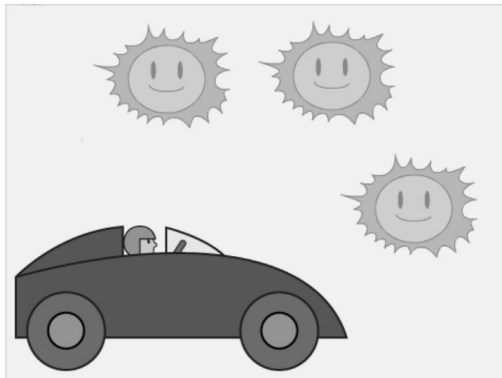
### Task 3 Animation and Game Making [28 marks]

#### Create Game:

You are required to create a game using the following files:

- **SUN**
- **CAR**
- **BANG**
- **CHEER**
- **FIELD**

- 21 Open a new game file. Choose the file **FIELD** for the backdrop. Using the files **CAR** and **SUN**, add a car and three suns as objects. You will see the following display:



[4]

- 22 Save your work as: **MyCarGame\_<Your Name>\_<Centre Number>\_<Index Number>** [1]

- 23 You are to create a game where an electric car tries to charge by touching each of the three suns. The car increases in size every time it touches a sun.

The rules of the game are:

- When the game starts:
  - the car appears at the bottom left at 50% of its size
  - three suns appear in random locations.
- During the game:
  - the car is moved up, down, left and right using the arrow keys on the keyboard [7]
  - when the car touches a sun [4]
    - the car increases in size by 10%
    - the sun disappears. [4]
- The game finishes when:
  - the car touches an edge
    - the **BANG** sound is played
    - remaining suns disappear
    - the text 'Game Over' is displayed for two seconds
    - the car disappears
  - or the car touches the last sun
    - the **CHEER** sound is played
    - the text 'Fully Charged' is displayed for two seconds. [8]

- 24 Save your work.

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*Copyright Acknowledgements:*

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