**Marking Scheme**

**MONITORING AND CONTROLLING TRAFFIC**

1. Any three from the following

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| smart roadways constantly adapt to traffic conditions, reducing traffic jams and minimizing everyone’s journey time. |
| Transport systems are more efficient – more cars,trains and aeroplanes can use the transport network , allowing for more regular services |
| Traffic offences(for example , driving in the wrong lane) can be automatically penalized using ANPR |
| Stolen cars and criminals can b.e spotted using ANPR |
| Computerized control systems minimize human error , which reduces the arte of accidents. |

1. Any three from the following

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| Very expensive system to set up in the first place (high technology requirements) |
| The ever – present fear of hacking into the vehicles control system |
| Security and safety issues (software glitches could be catastrophic; software updates would need to be carefully controlled to avoid potential disasters) |
| The need to make sure the system is well-maintained at all times; cameras need to be kept clean so that they do not give false results; sensors could fail to function in heavy snowfall or blizzard conditions(radar or ultrasonic signals could be deflected by heavy snow particles). |
| Driver and passenger reluctance of the new technology |
| Reduction in the need for taxis could lead to unemployment |

1. Any four from the following

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| Sensors to detect turbulence to ensure smooth flights |
| An increase in self testing of all circuits and systems |
| Sensors that would automatically detect depressurization in the cabin, therefore allowing for quick stabilization of the aeroplane |
| Use of GPS for navigation and speed calculations |
| Use of actuators to control, for example, throttle, flaps (on the wings) and the rudder. |