

B.Sc.(Honours) Examination, 2019
Semester-IV(CBCS)
Physics (Honours)
Skill Enhancing Compulsory Course: SECC-2

Time: Two Hours

Full Marks: 25

Questions are of value as indicated in the margin.

Answer ***any four*** questions.

1. a) Discuss 'for' loops in openscad. What does the 'hull' command do? 3
b) What is the format of an STL file? 3
2. a) What is an 'environmental variable'? 3
b) What is the syntax of the QUERY_STRING environmental variable? 2
c) What is the 'get' method in the context of HTML forms? 1
3. a) 'Content headers have to be explicitly generated by CGI programs' – why? 3
b) Write a small CGI program which will read-in a name from a HTML-form element called 'naam' and produce a HTML page with the content "Your name is: <name>". Use 'uncgi'. 3
4. a) After 'uploading' a 'sketch' into an Arduino board, where does the programme code reside (in the microcontroller)? 2
b) What is meant by a 10-bit resolution in the ADC of the microcontroller? 1
c) Write a small sketch to switch pin no 10 of the Arduino to a high state. 3
5. Write a sketch which will read-in a floating point number from the serial monitor and return "MORE" to the serial monitor if the number is more than 'pi' and "LESS or equal" otherwise. 6
6. a) How to find the ip-address of a Linux (Raspberry Pi) machine? 2
b) Without writing explicit code, describe the steps in developing a system for turning on an LED from your smart phone over WiFi using a Raspberry Pi and an Arduino. 4

[One mark for clear presentation]
