

**ASUTOSH COLLEGE**  
**(Affiliated to University of Calcutta)**  
**Semester 4- Examination**  
**Physics-Honours**  
**Paper-SEC B-1**  
**New CBCS Syllabus**  
**Internal Examination**  
**Full Marks-20**  
**Time- 30 minutes**

1. Answer *Ten* questions

**2X10=20**

- (a) Mention the Flash Memory and RAM configuration of Arduino Microcontroller.
- (b) Write down the full form of EEPROM and ICSP.
- (c) White the functionality of TX / RX LEDs on Arduino Uno board.
- (d) How many analog and digital pins does Arduino Uno have?
- (e) Which Arduino pins have pulse width modulation capability?
- (f) How many ground pins and power pins does Arduino Uno board have? What are the voltage outputs of the power pins?
- (g) What is the functionality of “delay” in Arduino IDE and express delay(1000) in ‘Sec’ units.
- (h) Can we measure potential difference above 5 Volts using Arduino? If yes, explain the method.
- (i) What is ‘baud rate’? how does it affect displayed values in ‘Serial Monitor’?
- (j) What is the analog input resolution of Arduino Uno? How can you calculate that?
- (k) What is the clock speed of Arduino Uno and many measurements are possible per second by Arduino Uno?
- (l) What is the functionality of ‘millis’ function of Arduino IDE and how it can be used in capacitor charging/discharging experiment using Arduino?
- (m) What minimum and maximum number ‘int’ type variable can store in Arduino? (Given ‘int’ corresponds to two bytes of memory)
- (n) Write down the functionality of ‘PinMode’ and ‘digitalWrite’ functions of Arduino IDE.
- (o) What are the functionality of ‘continue’ and ‘break’ statements in Arduino IDE?

**ASUTOSH COLLEGE**  
**(Affiliated to University of Calcutta)**  
**Semester 6- Examination**  
**Physics-Honours**  
**Paper-DSE B**  
**Old CBCS Syllabus**  
**Internal Examination**  
**Full Marks-20**  
**Time- 30 minutes**

1. Answer any *Ten* questions

**2X10=20**

- a) Write down one advantage and one disadvantage of conventional energy sources.
- b) What is the full form of OTEC?
- c) What is biomass?
- d) What is solar photovoltaic cell?
- e) Mention the two main factors to be considered for proposing a wind power site.
- f) How geothermal energy is generated?
- g) Define solar constant.
- h) Explain briefly how energy is released in nuclear fission.
- i) What are flat plate solar collectors?
- j) What do you mean by global warming?
- k) Define piezoelectric effect.
- l) Write down two differences between tidal and wave energy.
- m) Compare among thermal energy and hydro energy.
- n) What is a linear generator?
- o) Mention two factors on which the generation of hydroelectricity depends.