Module 14 : SOLAR ENERGY

Name:	Date:

Part A: Multiple choice question (MCQ)

1) Solar energy means using energy from…

(a) battery
(b) wind
(c) sunlight
(d) coal fuel

2) The following component can be used as renewable energy for hybrid system, EXCEPT.

i. diesel generator ii. wind turbine
iii. nuclear iv. biomass

(a) iii only
(b) i, iii, iv
(c) i, ii, iv

3) The application of a stand-alone PV system produces electricity for the following application.

i. house hold electricity apparatus
ii. telecommunication systems
iii. navigation system
iv. cooker or heater equipment

(a) ii, iii, iv
(b) i, iii, iv
(c) i, ii,iii,iv

4) A silicon cell of photovoltaic consist of how many electrons?

(a) 2
(b) 4
(c) 26
(d) 34

5) According to BS 7671, what is the colour cable for positive of an unearthed DC circuit?

(a) black
(b) red
(c) brown
(d) green

6) Which below is non-renewable energy?

(a) geothermal
(b) hydro
(c) coal
(d) biomass

7) What is solar energy?

(a) uses water flow to produce electricity
(b) uses sunlight to generate electricity
(c) uses wind energy to produce electricity
(d) uses lava to produce electricity

8) The following are the advantage of grid connected PV system, EXCEPT.

i. reduce the power bill from local electric company.
ii. reduce carbon production and burning fuel.
iii. the meter unit is freely given to consumer.
iv. easy to install.

(a) iii
(b) ii, iv
(c) i

9) A voltage regulator consist of the following elements, except.

(a) stable reference voltage
(b) voltage sampling element
(c) transformer to step down voltage
(d) power dissipating control

10) The followings are the functions of solar charge controller, except.

(a) to protect load against over voltage
(b) to collect energy from each cell
(c) to regulate battery voltage
(d) to charge battery

11) The following are component for hybrid system, except.

(a) mini hydro
(b) diesel generator
(c) wind turbine generator
(d) coal power generator

12) What is the unit to identify battery capacity?

(a) current
(b) power
(c) ampere hour
(d) voltage

13) Deep cycle battery has how many discharge rate percentage?

(a) 90 %
(b) 80 %
(c) 50 %
(d) 35 %

14) Which type of battery is cheap and easily available?

(a) AGM battery
(b) marine battery
(c) lead acid battery
(d) lithium battery

15) Generator is used for.

(a) charging the battery
(b) to supply load circuits
(c) to supply power to solar panel
(d) to supply power to controller

16) Which of the PV array is more efficiency?

(a) mono-crystalline silicon
(b) poly-crystalline silicon
(c) amorphous silicon
(d) hybrid

17) In PV system, the battery acting as....

(a) energy storage
(b) increase power output
(c) change from AC to DC

18) Grid connection system are basically___

(a) part of PV connection
(b) owner usage only
(c) supplying PV energy to grid
(d) battery to inverter unit

19) What is a inverter?

(a) to change positive to negative
(b) to change DC to AC supply
(c) to increase output voltage.
(d) to increase solar current

20) Given a battery capacity is 100Ah, the current out is 6.5 A per hour, find the time discharged?

(a) 10 hours
(b) 15.38 hours
(c) 0.065 hours
(d) 650 hours

Part B: Subjective Question

1) List down three (3) benefits of solar energy.

a)……

b)……

c)……

2) List six (6) types of renewable energy source.

a)……

b)……

c)……

d)……

e)……

f)……

3) The amount of power collected from a solar cell is determine by following three factors.

a)……

b)……

c)……

4) a) Name two(2) material in a PV array.

i)_____

ii) _____

b) Identify three(3) testing required on PV system.

i. _____

ii. _____

iii. _____