

# **OBJECTIVE PHYSICS**

**For B.Sc. Students**

*Editor : Dr. C. M. Kale*

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Edited by  
Dr. C. M. Kale

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## FOREWORD

It gives me an immense pleasure to introduce this book consisting of multiple choice questions based on undergraduate (B.Sc.) Physics curriculum by the Editor Dr. C. M. Kale of Indraraj Arts, Commerce and Science College, Sillod. Dr. C. M. Kale and his co-authors have been teaching this subject for over twenty years and achieved thorough depth in the subject.

This book covers the current syllabus prescribed for the B.Sc. 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> year students and deals with the multiple choice questions generated on various topics of Physics with optimum level. M.C.Qs are also set on application of laws, principles and concepts of Physics.

I am sure, the book will prove a boon to students of B.Sc. as well as those students who are appearing for SET, NET, PET and other competitive examinations and help them to acquire sound knowledge of the Physics.

In today's pandemic situation all universities are going for online MCQ type examinations as well. For them this book will be very useful to teachers.

*K. M. Jadhav*

Dr. K. M. Jadhav  
Senior Professor  
Dept. of Physics,  
Dr. B. A. M. U. Aurangabad.

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## SOLAR PHOTOVOLTAIC SYSTEM

### MULTIPLE CHOICE QUESTIONS

- 1]. The electrons in the outermost shell of the atom are called as, - - -  
 (a) **Valance Electron** (b) Conduction Electron  
 (c) Free electron (d) None of the above
- 2]. At absolute zero temperature, a semiconductor is a perfect, - - -  
 (a) Conductor (b) **Insulator**  
 (c) Semiconductor (d) Dielectric
- 3]. Such a P-N junction forms a very useful device and is called  
 (a) Transistor (b) Transformer  
 (c) Resistor (d) **semiconductor diode**
- 4]. Whenever a semiconductor material is illuminated by a photon may be absorbed and propagated through the material depending upon the photon energy - - - of the semiconductor.  
 (a) **Bandgap energy** (b) Binding Energy  
 (c) Kinetic energy (d) Potential Energy
- 5]. When  $E = h\nu > E_g$ , the incident photons get - - - in the semiconductor.  
 (a) Transmitted (b) Reflected  
 (c) **Absorbed** (d) Scattered
- 6]. In the solar cell the typical value of fill factor is in the range of, - - -  
 (a) **0.5-0.083** (b) 0.5-0.085  
 (c) 0.5-0.081 (d) 0.5-0.082

- 7]. We know that holes and electrons are mobile charges, and therefore are known as, - - -  
 (a) Free charge carriers (b) bound charge carriers  
 (c) **Mobile charge carriers** (d) opposite charge carriers
- 8]. The potential barrier formed in a P-N junction exerts a - - - force on mobile charge carriers.  
 (a) **Repelling force** (b) Attractive force  
 (c) Both forces (d) None of these
- 9]. The emf of lead acid cell depends on concentration of, - - -  
 (a) Acetic acid (b) **Sulphuric acid**  
 (c) Both acid (d) None of these
- 10]. During discharging the lead-acid cell the lead at the negative electrode is converted to - - - and takes place of lead paste in the plate.  
 (a) Lead phosphate (b) Lead solution  
 (c) **Leadsulphate** (d) None of the above
- 11]. In Bell laboratories produced the first solar cell in, - - -  
 (a) **1954** (b) 1854  
 (c) 1945 (d) 1845
- 12]. How many junctions does a diode consist of?  
 (a) 0 (b) **1**  
 (c) 2 (d) 3
- 13]. If the positive terminal of the battery is connected to the anode of the diode, then it is known as, - - -  
 (a) **Forward-bias** (b) Reverse-biased  
 (c) Equilibrium (d) Schottky barrier
- 14]. During reverse bias, a small current develops known as, - - -  
 (a) Forward current (b) Reverse current  
 (c) Active current (d) **Reverse saturation current**
- 15]. If the voltage of the potential barrier is  $V_0$ . A voltage  $V$  is applied to the input, at what moments will the barrier disappears?  
 (a)  $V < V_0$  (b)  **$V = V_0$**   
 (c)  $V > V_0$  (d)  $V \ll V_0$

- 16]. In a PN junction with no external voltage, the electric field between acceptor and donor ions is called a, - - -  
 (a) Peak (b) **Barrier**  
 (c) Threshold (d) Path
- 17]. In a PN junction the potential barrier is due to the charges on either side of the junction, these charges are, - - -  
 (a) Majority carriers (b) Minority carriers  
 (c) Both 'a' and 'b'  
 (d) **Fixed donor and acceptor ions**
- 18]. The efficiency of the solar cell is about, - - -  
 (a) 25 % (b) **15 %**  
 (c) 40 % (d) 60 %
- 19]. The output power from solar cell is the product of, - - -  
 (a) Current and charge  
 (b) Current and resistance  
 (c) **Current and Voltage**  
 (d) Voltage and charge
- 20]. The output of the solar cell is of the order, - - -  
 (a) 0.5 W (b) **1.0 W**  
 (c) 5.0 W (d) 10.25 W
- 21]. In a fuel cell cathode is of, - - -  
 (a) Oxygen (b) Ammonia  
 (c) **Hydrogen** (d) Carbon monoxide
- 22]. What is the maximum possible output of a solar array?  
 (a) 300 W/m<sup>2</sup> (b) 100 W/m<sup>2</sup>  
 (c) **250 W/m<sup>2</sup>** (d) 500 W/m<sup>2</sup>
- 23]. The current density of a photo voltaic cell ranges from, - - -  
 (a) 10 - 20 mA/cm<sup>2</sup> (b) **40 - 50 mA/cm<sup>2</sup>**  
 (c) 20 - 40 mA/cm<sup>2</sup> (d) 60 - 100 mA/cm<sup>2</sup>
- 24]. The term photo voltaic comes from, - - -  
 (a) Spanish (b) **Greek**  
 (c) German (d) English



25]. The volt is the units of emf that was named after its inventor, - - -  
 (a) **Alessandro Volta** (b) Alxender Volta  
 (c) Alexa Volta (d) Alexandro Volta

26]. The capacitance of a reverse biased PN junction, - - -  
 (a) Increases as reverse bias is increased  
 (b) Decreases as reverse bias is increased  
 (c) **Increases as reverse bias is decreased**  
 (d) Is insignificantly low

27]. For a PN junction diode, the current in reverse bias may be, - - -  
 (a) Few miliamperes (b) Between 0.2 A and 15 A  
 (c) Few amperes (d) **Few micro or nano amperes**

28]. A module in a solar panel refers to, - - -  
 (a) Series arrangement of solar cells.  
 (b) Parallel arrangement of solar cells.  
 (c) **Series and parallel arrangement of solar cells.**  
 (d) None of the above.

29]. The term photo voltaic is in use since, - - -  
 (a) 1840 (b) 1844  
 (c) **1849** (d) 1850

30]. When the source of light is not sun light then the photo voltaic cell is used as, - - -  
 (a) Photo diode (b) Photovoltaic cell  
 (c) **Photo detector** (d) Photo transmitter

31]. The region where the electrons and holes diffused across the junction is called, - - -  
 (a) Depletion Junction  
 (b) **Depletion region**  
 (c) Depletion space  
 (d) Depletion boundary

32]. The current produce by the solar cell can be given by, - - -  
 (a)  $I_L - I_D + I_{Sh}$  (b)  $I_L + I_D - I_{Sh}$   
 (c)  $I_L + I_D + I_{Sh}$  (d)  **$I_L - I_D - I_{Sh}$**

33]. The amount of photo generated current increases slightly with an increase in, - - -  
 (a) **Temperature** (b) Photons  
 (c) Diode current (d) Shunt current

34]. A typical output of a solar cell is, - - -  
 (a) 0.1 V (b) **0.26 V** (c) 1.1 V (d) 2 V

35]. Which of the following material is used in solar cells?  
 (a) Barium (b) **Silicon**  
 (c) Silver (d) Selenium

36]. The efficiency of a solar cell may be in the range, - - -  
 (a) 2 to 5% (b) **10 to 15%**  
 (c) 30 to 40% (d) 70 to 80%

37]. Satellite power requirement is provided through, - - -  
 (a) **Solar cells** (b) Dry cells  
 (c) Nickel Cadmium cells (d) Lead acid batteries

38]. Batteries are charged by, - - -  
 (a) Rectifiers (b) Engine generator sets  
 (c) Motor generator sets (d) **Any of the above**

39]. Battery container is acid resistance therefore it is made up of, - - -  
 (a) Glass (b) Plastic  
 (c) Wood (d) **All of the above**

40]. The following will happen if the battery charging rate is too high.  
 (a) Excessive gassing (b) Temperature rise will occur  
 (c) Bulging and buckling of plates we occur  
 (d) **All of the above**

41]. The following indicate that battery on charge has attained full charge, - - -  
 (a) Colour of electrode (c) Gassing  
 (c) Specific gravity (d) **All of the above**

42]. To prevent local action in battery only - - - is used in electrolytes.  
 (a) Pump water (b) **D stilled water**  
 (c) Tap water (d) Both 'a' and 'c'

43]. Ampere hour capacity of an industrial battery is based on - - - hours discharge rate.

- (a) 8
- (b) 12
- (c) 16
- (d) 24

44]. When two batteries are connected in parallel, it should be ensured that - - -

- (a) **They have same emf**
- (b) They have same make
- (c) They have the same ampere-hour capacity
- (d) They have identical internal resistance

45]. In a lead acid battery, separators are provided to, - - -

- (a) Reduce internal resistance
- (b) Facilitate flow of current
- (c) Reduce tendency for polarization
- (d) **Avoid internal short circuits**

46]. The electrode for a battery must be, - - -

- (a) A semi-conductor
- (b) An insulator
- (c) **A good conductor of electricity**
- (d) A bad conductor of electricity

47]. Cells are connected in series in order to, - - -

- (a) **Increase the voltage rating**
- (b) Increase the current rating
- (c) Increase the life of the cells
- (d) None of the above

48]. Five 2V cells are connected in parallel. The output voltage is, - - -

- (a) 1 V
- (b) 1.5 V
- (c) 1.75 V
- (d) **2 V**

49]. The open-circuit voltage of any storage cell depends wholly upon, -

- (a) Its chemical constituents
- (b) On the strength of its electrolyte
- (c) Its temperature
- (d) **All of the above**

50]. The current in a chemical cell is a movement of, - - -

- (a) Positive ions only
- (b) **Positive and negative ions**
- (c) Negative ions only
- (d) Positive hole charges

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51]. Each pentavalent atom donates one free electron and therefore are known as - - -

- (a) **Donor**
- (b) Acceptor
- (c) Combination
- (d) P-type semiconductor

52]. Internal resistance of a cell is due to, - - -

- (a) Resistance of electrolyte
- (b) Electrode resistance
- (c) Surface contact resistance between electrode and electrolyte
- (d) **All of the above**

53]. The output voltage of a charger is, - - -

- (a) Less than the battery voltage
- (b) **Higher than the battery voltage**
- (c) The same as the battery voltage
- (d) None of the above

54]. It is noticed that during charging, - - -

- (a) There is a rise in voltage
- (b) Energy is absorbed by the cell
- (c) Specific gravity of  $H_2SO_4$  is increased
- (d) **All of the above**

55]. A typical output of a solar cell is, - - -

- (a) 0.1 V
- (b) **0.26 V**
- (c) 1.1 V
- (d) 2 V

56]. Which of the following material is used in solar cells?

- (a) Barium
- (b) **Silicon**
- (c) Silver
- (d) Selenium

57]. In a lead acid cell, hydrogen is liberated at, - - -

- (a) Positive plate
- (b) **Negative plate**
- (c) Both positive and negative plates
- (d) None of the above

58]. Satellite power requirement is provided through, - - -

- (a) **Solar cells**
- (b) Dry cells
- (c) Nickel Cadmium cells
- (d) Lead acid batteries

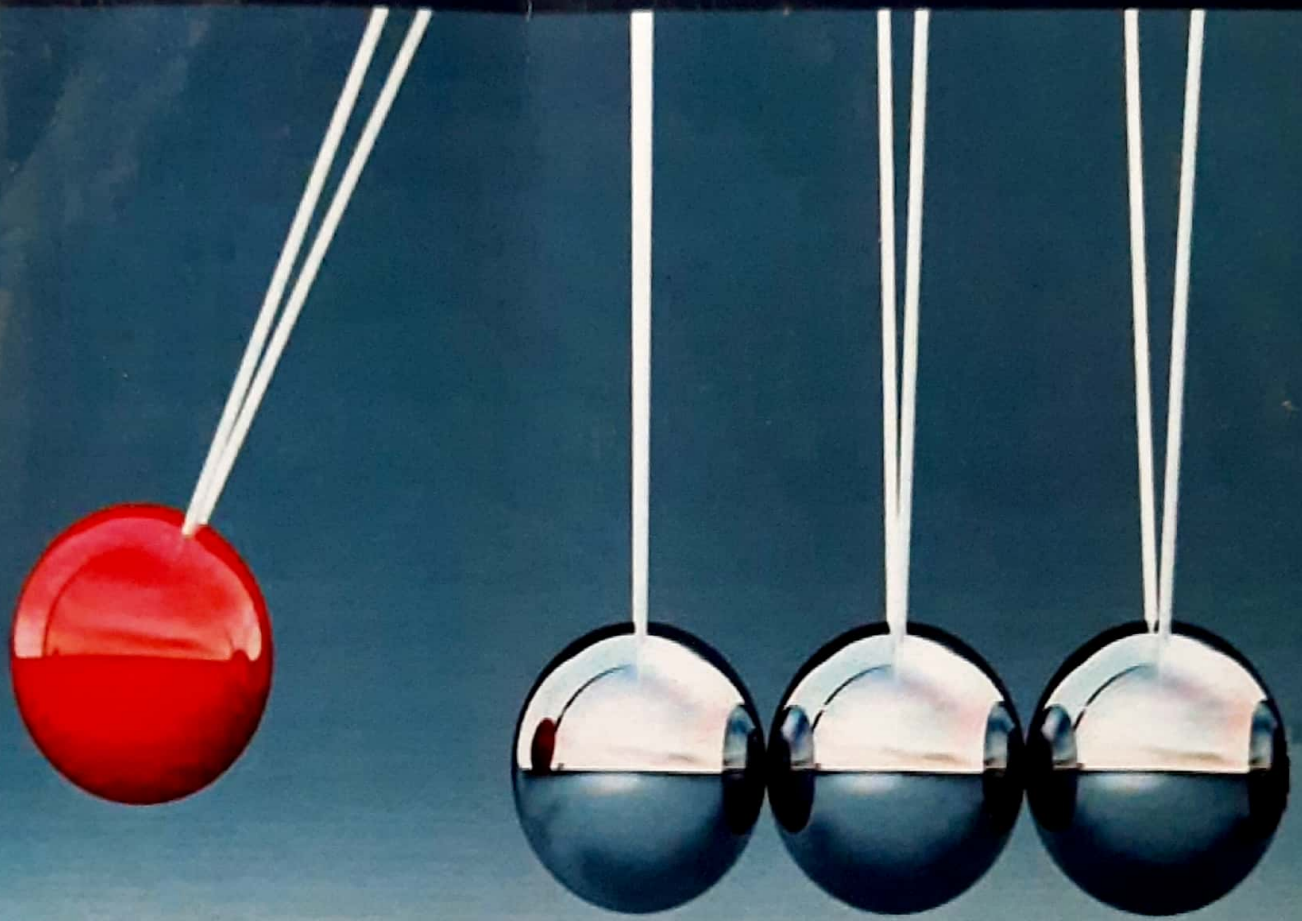
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- 59]. During the charging of a lead acid cell, - - -  
 (a) **Its voltage increases** (b) It gives out energy  
 (c) Its cathode becomes dark chocolate brown in Colour  
 (d) Specific gravity of  $H_2SO_4$  decreases
- 60]. Active materials of a lead acid cell are, - - -  
 (a) Spongy lead (b) Lead peroxide  
 (c) Dilute  $H_2SO_4$  (d) **All of the above**
- 61]. During charging the specific gravity of the electrolyte of a lead acid battery, - - -  
 (a) **Increases** (b) Decreases  
 (c) Remains the same (d) Becomes zero
- 62]. The capacity of a lead acid cell does not depend on its, - - -  
 (a) Temperature (b) **Rate of charge**  
 (c) Rate of discharge (d) Quantity of active material
- 63]. In a lead-acid cell dilute sulphuric acid approximately comprises the following, - - -  
 (a) One part  $H_2O$ , three parts  $H_2SO_4$   
 (b) Two-part  $H_2O$ , two parts  $H_2SO_4$   
 (c) **Three parts  $H_2O$ , One part of  $H_2SO_4$**   
 (d) All  $H_2SO_4$
- 64]. The watt-hour efficiency of a lead acid cell varies between, - - -  
 (a) 25 to 35% (b) 40 to 60%  
 (c) **70 to 80%** (d) 90 to 95%
- 65]. The capacity of a lead acid cell depends on, - - -  
 (a) Amperes (b) **Ampere-hours**  
 (c) Watts (d) Watt-hours
- 66]. The capacity of a lead acid cell depends on, - - -  
 (a) Rate of discharge (b) Temperature  
 (c) Density of electrolyte (d) **All of the above**
- 67]. Level of electrolyte in a cell should be - - - the level of plates  
 (a) Below (b) Equal to  
 (c) **Above** (d) None of the above

- 68]. In a lead acid cell, lead is called as, - - -  
 (a) Positive active material  
 (b) **Negative active material**  
 (c) Passive material  
 (d) None of the above
- 69]. Electrolyte used in a lead acid cell is, - - -  
 (a) NaOH (b)  **$H_2SO_4$**   
 (c) HCL (d)  $HNO_3$
- 70]. The lead acid cell never be discharged beyond, - - -  
 (a) **1.8 V** (b) 1.9 V  
 (c) 2 V (d) 2.1 V
- 71]. If a lead-acid cell is discharge below 1.8 V, the following will happen, - - -  
 (a) Capacity of cell will reduce  
 (b) Sulphation of plates will occur  
 (c) Internal resistance will increase  
 (d) **All of the above**
- 72]. In a lead acid battery the energy is stored in the form of, - - -  
 (a) Charged ions (b) **Chemical energy**  
 (c) Electrostatic energy (d) Electromagnetic energy
- 73]. The forbidden band exists in, - - -  
 (a) Semiconductor (b) Insulator  
 (c) Conductor (d) **Both a and b**
- 74]. No forbidden band exists between the valence band and the conduction band in a, - - -  
 (a) **Conductor** (b) Insulator  
 (c) Semiconductor (d) None of these
- 75]. The current flow through electrolyte is due to the movement of, - - -  
 (a) **Ions** (b) Holes  
 (c) Electrons (d) None of the above





# **OBJECTIVE PHYSICS**

**For B.Sc. Students**

*Editor : Dr. C. M. Kale*

# OBJECTIVE PHYSICS

## For B.Sc. Students

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Dr. C. M. Kale

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## FOREWORD

It gives me an immense pleasure to introduce this book consisting of multiple choice questions based on undergraduate (B.Sc.) Physics curriculum by the Editor Dr. C. M. Kale of Indraraj Arts, Commerce and Science College, Sillod. Dr. C. M. Kale and his co-authors have been teaching this subject for over twenty years and achieved thorough depth in the subject.

This book covers the current syllabus prescribed for the B.Sc. I<sup>st</sup>, II<sup>nd</sup> and III<sup>rd</sup> year students and deals with the multiple choice questions generated on various topics of Physics with optimum level. M.C.Qs are also set on application of laws, principles and concepts of Physics.

I am sure, the book will prove a boon to students of B.Sc. as well as those students who are appearing for SET, NET, PET and other competitive examinations and help them to acquire sound knowledge of the Physics.

In today's pandemic situation all universities are going for online MCQ type examinations as well. For them this book will be very useful to teachers.

*K. M. Jadhav*

Dr. K. M. Jadhav  
Senior Professor  
Dept. of Physics,  
Dr. B. A. M. U. Aurangabad.

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Beed.





46.

## SOLAR PHOTOVOLTAIC SYSTEM

### MULTIPLE CHOICE QUESTIONS

- 1]. The electrons in the outermost shell of the atom are called as, - - -  
 (a) **Valance Electron** (b) Conduction Electron  
 (c) Free electron (d) None of the above
- 2]. At absolute zero temperature, a semiconductor is a perfect, - - -  
 (a) Conductor (b) **Insulator**  
 (c) Semiconductor (d) Dielectric
- 3]. Such a P-N junction forms a very useful device and is called  
 (a) Transistor (b) Transformer  
 (c) Resistor (d) **semiconductor diode**
- 4]. Whenever a semiconductor material is illuminated by a photon may be absorbed and propagated through the material depending upon the photon energy - - - of the semiconductor.  
 (a) **Bandgap energy** (b) Binding Energy  
 (c) Kinetic energy (d) Potential Energy
- 5]. When  $E = h\nu > E_g$ , the incident photons get - - - in the semiconductor.  
 (a) Transmitted (b) Reflected  
 (c) **Absorbed** (d) Scattered
- 6]. In the solar cell the typical value of fill factor is in the range of, - - -  
 (a) **0.5-0.083** (b) 0.5-0.085  
 (c) 0.5-0.081 (d) 0.5-0.082

- 7]. We know that holes and electrons are mobile charges, and therefore are known as, - - -  
 (a) Free charge carriers (b) bound charge carriers  
 (c) **Mobile charge carriers** (d) opposite charge carriers
- 8]. The potential barrier formed in a P-N junction exerts a - - - force on mobile charge carriers.  
 (a) **Repelling force** (b) Attractive force  
 (c) Both forces (d) None of these
- 9]. The emf of lead acid cell depends on concentration of, - - -  
 (a) Acetic acid (b) **Sulphuric acid**  
 (c) Both acid (d) None of these
- 10]. During discharging the lead-acid cell the lead at the negative electrode is converted to - - - and takes place of lead paste in the plate.  
 (a) Lead phosphate (b) Lead solution  
 (c) **Leadsulphate** (d) None of the above
- 11]. In Bell laboratories produced the first solar cell in, - - -  
 (a) **1954** (b) 1854  
 (c) 1945 (d) 1845
- 12]. How many junctions does a diode consist of?  
 (a) 0 (b) **1**  
 (c) 2 (d) 3
- 13]. If the positive terminal of the battery is connected to the anode of the diode, then it is known as, - - -  
 (a) **Forward-bias** (b) Reverse-biased  
 (c) Equilibrium (d) Schottky barrier
- 14]. During reverse bias, a small current develops known as, - - -  
 (a) Forward current (b) Reverse current  
 (c) Active current (d) **Reverse saturation current**
- 15]. If the voltage of the potential barrier is  $V_0$ . A voltage  $V$  is applied to the input, at what moments will the barrier disappears?  
 (a)  $V < V_0$  (b)  $V = V_0$   
 (c)  $V > V_0$  (d)  $V \ll V_0$

- 16]. In a PN junction with no external voltage, the electric field between acceptor and donor ions is called a, - - -  
 (a) Peak (b) **Barrier**  
 (c) Threshold (d) Path
- 17]. In a PN junction the potential barrier is due to the charges on either side of the junction, these charges are, - - -  
 (a) Majority carriers (b) Minority carriers  
 (c) Both 'a' and 'b' (d) **Fixed donor and acceptor ions**
- 18]. The efficiency of the solar cell is about, - - -  
 (a) 25 % (b) **15 %**  
 (c) 40 % (d) 60 %
- 19]. The output power from solar cell is the product of, - - -  
 (a) Current and charge  
 (b) Current and resistance  
 (c) **Current and Voltage**  
 (d) Voltage and charge
- 20]. The output of the solar cell is of the order, - - -  
 (a) 0.5 W (b) **1.0 W**  
 (c) 5.0 W (d) 10.25 W
- 21]. In a fuel cell cathode is of, - - -  
 (a) Oxygen (b) Ammonia  
 (c) **Hydrogen** (d) Carbon monoxide
- 22]. What is the maximum possible output of a solar array?  
 (a) 300 W/m<sup>2</sup> (b) 100 W/m<sup>2</sup>  
 (c) **250 W/m<sup>2</sup>** (d) 500 W/m<sup>2</sup>
- 23]. The current density of a photo voltaic cell ranges from, - - -  
 (a) 10 - 20 mA/cm<sup>2</sup> (b) **40 - 50 mA/cm<sup>2</sup>**  
 (c) 20 - 40 mA/cm<sup>2</sup> (d) 60 - 100 mA/cm<sup>2</sup>
- 24]. The term photo voltaic comes from, - - -  
 (a) Spanish (b) **Greek**  
 (c) German (d) English

25]. The volt is the units of emf that was named after its inventor, - - -  
 (a) **Alessandro Volta** (b) Alxender Volta  
 (c) Alexa Volta (d) Alexandro Volta

26]. The capacitance of a reverse biased PN junction, - - -  
 (a) Increases as reverse bias is increased  
 (b) Decreases as reverse bias is increased  
 (c) **Increases as reverse bias is decreased**  
 (d) Is insignificantly low

27]. For a PN junction diode, the current in reverse bias may be, - - -  
 (a) Few miliamperes (b) Between 0.2 A and 15 A  
 (c) Few amperes (d) **Few micro or nano amperes**

28]. A module in a solar panel refers to, - - -  
 (a) Series arrangement of solar cells.  
 (b) Parallel arrangement of solar cells.  
 (c) **Series and parallel arrangement of solar cells.**  
 (d) None of the above.

29]. The term photo voltaic is in use since, - - -  
 (a) 1840 (b) 1844  
 (c) **1849** (d) 1850

30]. When the source of light is not sun light then the photo voltaic cell is used as, - - -  
 (a) Photo diode (b) Photovoltaic cell  
 (c) **Photo detector** (d) Photo transmitter

31]. The region where the electrons and holes diffused across the junction is called, - - -  
 (a) Depletion Junction  
 (b) **Depletion region**  
 (c) Depletion space  
 (d) Depletion boundary

32]. The current produce by the solar cell can be given by, - - -  
 (a)  $I_L - I_D + I_{Sh}$  (b)  $I_L + I_D - I_{Sh}$   
 (c)  $I_L + I_D + I_{Sh}$  (d)  **$I_L - I_D - I_{Sh}$**

33]. The amount of photo generated current increases slightly with an increase in, - - -  
 (a) **Temperature** (b) Photons  
 (c) Diode current (d) Shunt current

34]. A typical output of a solar cell is, - - -  
 (a) 0.1 V (b) **0.26 V** (c) 1.1 V (d) 2 V

35]. Which of the following material is used in solar cells?  
 (a) Barium (b) **Silicon**  
 (c) Silver (d) Selenium

36]. The efficiency of a solar cell may be in the range, - - -  
 (a) 2 to 5% (b) **10 to 15%**  
 (c) 30 to 40% (d) 70 to 80%

37]. Satellite power requirement is provided through, - - -  
 (a) **Solar cells** (b) Dry cells  
 (c) Nickel Cadmium cells (d) Lead acid batteries

38]. Batteries are charged by, - - -  
 (a) Rectifiers (b) Engine generator sets  
 (c) Motor generator sets (d) **Any of the above**

39]. Battery container is acid resistance therefore it is made up of, - - -  
 (a) Glass (b) Plastic  
 (c) Wood (d) **All of the above**

40]. The following will happen if the battery charging rate is too high.  
 (a) Excessive gassing (b) Temperature rise will occur  
 (c) Bulging and buckling of plates we occur  
 (d) **All of the above**

41]. The following indicate that battery on charge has attained full charge, - - -  
 (a) Colour of electrode (c) Gassing  
 (c) Specific gravity (d) **All of the above**

42]. To prevent local action in battery only - - - is used in electrolytes.  
 (a) Pump water (b) **D stilled water**  
 (c) Tap water (d) Both 'a' and 'c'



43]. Ampere hour capacity of an industrial battery is based on - - - hours discharge rate.

- (a) 8
- (b) 12
- (c) 16
- (d) 24

44]. When two batteries are connected in parallel, it should be ensured that - - -

- (a) **They have same emf**
- (b) They have same make
- (c) They have the same ampere-hour capacity
- (d) They have identical internal resistance

45]. In a lead acid battery, separators are provided to, - - -

- (a) Reduce internal resistance
- (b) Facilitate flow of current
- (c) Reduce tendency for polarization
- (d) **Avoid internal short circuits**

46]. The electrode for a battery must be, - - -

- (a) A semi-conductor
- (b) An insulator
- (c) **A good conductor of electricity**
- (d) A bad conductor of electricity

47]. Cells are connected in series in order to, - - -

- (a) **Increase the voltage rating**
- (b) Increase the current rating
- (c) Increase the life of the cells
- (d) None of the above

48]. Five 2V cells are connected in parallel. The output voltage is, - - -

- (a) 1 V
- (b) 1.5 V
- (c) 1.75 V
- (d) **2 V**

49]. The open-circuit voltage of any storage cell depends wholly upon, -

- (a) Its chemical constituents
- (b) On the strength of its electrolyte
- (c) Its temperature
- (d) **All of the above**

50]. The current in a chemical cell is a movement of, - - -

- (a) Positive ions only
- (b) **Positive and negative ions**
- (c) Negative ions only
- (d) Positive hole charges

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51]. Each pentavalent atom donates one free electron and therefore are known as - - -

- (a) **Donor**
- (b) Acceptor
- (c) Combination
- (d) P-type semiconductor

52]. Internal resistance of a cell is due to, - - -

- (a) Resistance of electrolyte
- (b) Electrode resistance
- (c) Surface contact resistance between electrode and electrolyte
- (d) **All of the above**

53]. The output voltage of a charger is, - - -

- (a) Less than the battery voltage
- (b) **Higher than the battery voltage**
- (c) The same as the battery voltage
- (d) None of the above

54]. It is noticed that during charging, - - -

- (a) There is a rise in voltage
- (b) Energy is absorbed by the cell
- (c) Specific gravity of  $H_2SO_4$  is increased
- (d) **All of the above**

55]. A typical output of a solar cell is, - - -

- (a) 0.1 V
- (b) **0.26 V**
- (c) 1.1 V
- (d) 2 V

56]. Which of the following material is used in solar cells?

- (a) Barium
- (b) **Silicon**
- (c) Silver
- (d) Selenium

57]. In a lead acid cell, hydrogen is liberated at, - - -

- (a) Positive plate
- (b) **Negative plate**
- (c) Both positive and negative plates
- (d) None of the above

58]. Satellite power requirement is provided through, - - -

- (a) **Solar cells**
- (b) Dry cells
- (c) Nickel Cadmium cells
- (d) Lead acid batteries

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- 59]. During the charging of a lead acid cell, - - -  
 (a) **Its voltage increases** (b) It gives out energy  
 (c) Its cathode becomes dark chocolate brown in Colour  
 (d) Specific gravity of  $H_2SO_4$  decreases
- 60]. Active materials of a lead acid cell are, - - -  
 (a) Spongy lead (b) Lead peroxide  
 (c) Dilute  $H_2SO_4$  (d) **All of the above**
- 61]. During charging the specific gravity of the electrolyte of a lead acid battery, - - -  
 (a) **Increases** (b) Decreases  
 (c) Remains the same (d) Becomes zero
- 62]. The capacity of a lead acid cell does not depend on its, - - -  
 (a) Temperature (b) **Rate of charge**  
 (c) Rate of discharge (d) Quantity of active material
- 63]. In a lead-acid cell dilute sulphuric acid approximately comprises the following, - - -  
 (a) One part  $H_2O$ , three parts  $H_2SO_4$   
 (b) Two-part  $H_2O$ , two parts  $H_2SO_4$   
 (c) **Three parts  $H_2O$ , One part of  $H_2SO_4$**   
 (d) All  $H_2SO_4$
- 64]. The watt-hour efficiency of a lead acid cell varies between, - - -  
 (a) 25 to 35% (b) 40 to 60%  
 (c) **70 to 80%** (d) 90 to 95%
- 65]. The capacity of a lead acid cell depends on, - - -  
 (a) Amperes (b) **Ampere-hours**  
 (c) Watts (d) Watt-hours
- 66]. The capacity of a lead acid cell depends on, - - -  
 (a) Rate of discharge (b) Temperature  
 (c) Density of electrolyte (d) **All of the above**
- 67]. Level of electrolyte in a cell should be - - - the level of plates  
 (a) Below (b) Equal to  
 (c) **Above** (d) None of the above

- 68]. In a lead acid cell, lead is called as, - - -  
 (a) Positive active material  
 (b) **Negative active material**  
 (c) Passive material  
 (d) None of the above
- 69]. Electrolyte used in a lead acid cell is, - - -  
 (a) NaOH (b)  **$H_2SO_4$**   
 (c) HCL (d)  $HNO_3$
- 70]. The lead acid cell never be discharged beyond, - - -  
 (a) **1.8 V** (b) 1.9 V  
 (c) 2 V (d) 2.1 V
- 71]. If a lead-acid cell is discharge below 1.8 V, the following will happen, - - -  
 (a) Capacity of cell will reduce  
 (b) Sulphation of plates will occur  
 (c) Internal resistance will increase  
 (d) **All of the above**
- 72]. In a lead acid battery the energy is stored in the form of, - - -  
 (a) Charged ions (b) **Chemical energy**  
 (c) Electrostatic energy (d) Electromagnetic energy
- 73]. The forbidden band exists in, - - -  
 (a) Semiconductor (b) Insulator  
 (c) Conductor (d) **Both a and b**
- 74]. No forbidden band exists between the valence band and the conduction band in a, - - -  
 (a) **Conductor** (b) Insulator  
 (c) Semiconductor (d) None of these
- 75]. The current flow through electrolyte is due to the movement of, - - -  
 (a) **Ions** (b) Holes  
 (c) Electrons (d) None of the above



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स्त्रियांच्या आर्थिक, सामाजिक समस्या  
— एक समाजशास्त्रीय अभ्यास’



प्रा. डॉ. आव्हाड भगवान भानुदास



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