LAMPIRAN J

POLITEKNIK MALAYSIA

BORANG INVENTORI PROJEK PELAJAR

PERKARA	**MAKLUMAT** *INFORMATION*
Program *Program*	DEP5A
Jabatan *Department*	Electrical Engineering Department
Semester/ Tahun *Semester/ Year*	Semester 5 / 2017
Tajuk Projek *Project Title*	Multipurpose *Nafihati* Devices Using Solar Panel System
Jenis Projek *Type of Project*	Hardware
Kategori Kluster Penyelidikan *Category/ research Cluster*	Tanda " / " pada yang berkenaan: *Please tick " / " where applicable* [ ] Sains tulen (*Pure Science*) [ ] Sains gunaan (*Applied Science*) [■] Teknologi dan kejuruteraan (*Technology and Engineering*) [ ] Sains kesihatan dan klinikal (*Clinical and Health Sciences*) [ ] Sains sosial (*Social Sciences*) [ ] Sastera dan sastera ikhtisas (*Arts and Applied Arts*) [ ] Warisan alam dan budaya (*Natural Sciences and National Heritage*) [ ] Teknologi maklumat dan komunikasi (*Information and Communication Technology*)
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Abstrak *Abstract*	Multipurpose *Nafihati* Devices Using Solar Panel System (MNDSPS) is the end product comes with a solar panel to capture and convert solar energy to electrical energy. The electrical energy was stored in a rechargeable battery with a charge controller to regulate the charging process. A battery level indicator was in place to monitor the battery storage capacity. Its purpose to keep batteries properly fed and safe for the long term. The batteries is a DC power output. This project proposed a multi-purpose devices that can convenient user while doing outdoor activities. This project can be used as smartphone charging, supplying electricity to lights or sources of supply for many applications DC in forest or campsites
Keyword *Keyword* (max 5 word)	• Solar Panel System • Rechargeable battery • Outdoor Activites.
Objektif Projek *Project Objectives*	• To construct , design and build the Multipurpose *Nafihati* Devices using Solar Panel System. • To provide all the facilities such as LED light, USB port and rechargeable battery by solar panel. • To replace AC conventional generator with AC electronic generator/ inverter to become more efficient because AC generator noising , heavy weight and have pollution.
Skop Projek *Project scope*	1. The solar panel is 18v 20 watt and from that source only using 14.8v dc to rechargeable battery as electric energy. 2. This project have multi output like USB socket to supply + 5VDC and using for hand phone charger , mp3 player charger and LED lighting. 3. This project also include digital, AC volt meter, power meter.
IP No	Tiada

Dapatan
Finding
(500 words max)

Table 1.1 : Specification Of Multipurpose Nafihati Devices using Solar Panel System.

Descriptions	Specifications
Input voltage of solar panel	18V
Voltage regulator output (DC operations)	5VDC
Battery	12 Volt
Display volt	Show the volt battery leave.
Lamp	Electronic Fluorescent Ballast

Hardware Design Theory and Calculations

Some calculations are needed to be carried out before proceeding to hardware design stage. According to Ohm's Law, the current flowing across an electronic component inside a circuit should be directly proportional to amount of voltage applied, while keeping the resistance constant. Using the properties of Ohm's law, we can now calculate the capacity needed to operate some low wattage appliances running at 12VDC supply. Table II tabulates the calculated power consumption for selected hardware devices.

TABLE 4.2.2 : POWER CONSUMPTION FOR SELECTED HARDWARE DEVICES

Description	Ratings (Watts)	Usage (Hours)	Consumption (Watt Hours)
Solar panel	5	-	-
Battery	12V 7.2 AH	-	-
Lamp	18	2	36
Fan	15	2	30
Powerbank	5	2	10

1) This calculation is based on a list of items stated above. The power ratings of some of the appliances were obtained through web resources. The lamps DC lights are rated at 18W each, so we based on operating 2 units to achieve 36W. The fan is rated at 15W, so we based on operating 2 units to achieve 30W. As for the powerbank, since we know that it is drawing a current of 0.2A from an DC voltage of 5V and 12V, thus it is operating at roughly 5W.

Cadangan untuk kerja-kerja akan datang *Suggestion for future work* (*500words*)

- The technical colleges provide hardware requirement to create project with and increase the ease the project appliance of the aappliance workshop so that every student using the appliance, the appliance without the need to share and interfered with the other partners.
- Donations help form must be given in order of the student did not feel burdened with cost that will be covered to buy material project.
- As well as providing hardware as the appliance help to student , the techincal colleges also had to give ease workshop or place preparing for project because not all expert group comprised of students man most students group mixed with student women and this is hostile to do a job.
- Small sized batteries but require better have amphere rating of the quality of existing . it can be used with the run long if volt and amphere-hour rating quality.

Cadangan untuk kerja-kerja akan datang *Suggestion for future work (500words)*		
	Figure 1	Figure 2
Rating/Level	Jabatan	

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