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UNIVERSITI TUN HUSSEIN ONN MALAYSIA

**FINAL EXAMINATION
SEMESTER II
SESSION 2012/2013**

COURSE NAME : ELECTRICAL POWER EQUIPMENT
COURSE CODE : DAE 35403
PROGRAMME : 3 DAL
EXAMINATION DATE : MARCH 2012
DURATION : 2 ½ HOURS
INSTRUCTIONS : ANSWER FOUR (4) QUESTION ONLY

THIS QUESTION PAPER CONSISTS OF FIVE (5) PAGES

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- Q1**
- (a) State five (5) safety gears to cover head and body.
(5 marks)
 - (b) State the colours to indicate the following safety signs:-
 - (i) mandatory
 - (ii) warning
 - (iii) protected
 - (iv) fire safety
 - (v) safety and instruction / information(5 marks)
 - (c) Write three (3) basic rules of to electrical accident prevention.
(5 marks)
 - (d) Briefly explain on when the danger tags are to be used.
(5 marks)
 - (e) Give two (2) comparisons between danger tags and out of order tags.
(5 marks)
- Q2**
- (a) State three (3) steps to set-up EPM and test program.
(5 marks)
 - (b) State three (3) benefits of electrical preventive maintenance (EPM).
(5 marks)
 - (c) State the purpose of record keeping.
(5 marks)
 - (d) Briefly describe on how to perform the insulation testing.
(5 marks)

- (e) Give three (3) advantages of DC voltage testing for insulation.
(5 marks)

- Q3** (a) List five (5) tests of single phase transformer.
(5 marks)

- (b) State the main purpose of the DC testing of transformer.
(5 marks)

- (c) Write the test procedures for the DC testing of transformer.
(8 marks)

- (d) With the aid of suitable diagram, briefly explain the generalized maintenance procedures for lightning arresters for conducting the insulation resistance and high potential test.
(7 marks)

- Q4** (a) State the function of insulation power factor test.
(5 marks)

- (b) With the aid of suitable diagram, briefly describe the following:-
(i) Grounded-Specimen Test Mode (GST)
(ii) Grounded-Specimen Test Mode with Guard (GST-G).
(15 marks)

- (c) State the major difference between medium voltage circuit breakers (MV-CB) and oil circuit breakers (OCBs).
(5 marks)

- Q5**
- (a) Draw and label completely medium voltage shielded cable.
(5 marks)
 - (b) List five (5) types of the commonly used materials for cable insulation.
(3 marks)
 - (c) State four (4) factors that affects the current-carrying capacity of cable.
(2 marks)
 - (d) State five (5) basic criteria for yearly cable inspection for maintenance purposes.
(5 marks)
 - (e) Briefly describe the cable faults due to fire and lightning surges.
(5 marks)
 - (f) Give two (2) comparisons between rubber and P.V.C. that used for cable insulation of the conductor.
(5 marks)
- Q6**
- (a) Define the term “grounding”.
(3 marks)
 - (b) List four (4) methods in grounding resistance measurement.
(4 marks)
 - (c) The bearings of electrical machine should be carefully inspected periodically in order to obtain maximum life. Based on the above statement, list four (4) causes which can produce hot bearings.
(4 marks)

- (d) Explain four (4) classes of insulation systems used for machine windings.

(8 marks)

- (e) Explain three (3) signs of deterioration at armature windings which can be spot by using visual inspection method.

(6 marks)

- END OF QUESTION -