KOLEJ YAYASAN PELAJARAN JOHOR
FINAL EXAMINATION

COURSE NAME	: **ELECTRONIC MANUFACTURING PROCESS**
COURSE CODE	: **DEE 2023**
EXAMINATION	: **APRIL 2018**
DURATION	: **2 HOURS 30 MINUTES**

INSTRUCTION TO CANDIDATES

1. This examintaion paper consists **FOUR (4)** questions. Answer **ALL** questions in the answer booklet provided.

2. Candidates are not allowed to bring any material to examination room except with the permission from the invigilator.

3. Please check to make sure that this examination pack consist of:
   i. Question Paper
   ii. Answer Booklet

DO NOT TURN THIS PAGE UNTIL YOU ARE TOLD TO DO SO

This examination paper consists of 5 printed pages including front page

This part contains of **FOUR(4)** questions. Answer **ALL** questions in the answer booklet provided.

*Bahagian ini mengandungi **EMPAT(4)** soalan. Jawab **SEMUA** soalan di dalam buku jawapan yang disediakan.*

QUESTION 1/SOALAN 1

a) Define the manufacturing proceses.

Takrif definisi proses pembuatan.

(2 marks/*markah*)

b) A product is made to stock. Annual demand rate is 10,000 units. One unit of product costs RM10 and the holding cost rate = 24% per years. Setting up to produce a batch of products requires changeover of equipment, which takes 3 hours. The cost of equipment downtime plus labour = RM100/hour. Determine the economic order quantity (EOQ).

Satu produk dijadikan sebagai simpanan. Permintaan tahunan sebanyak 10,000 unit. Satu unit produk bernilai RM10 dan kos pegang = 24%/tahun. Penyediaan pengeluaran produk secara kelompok memerlukan pertukaran peralatan, mengambil masa selama 3 jam. Kos masa henti peralatan dan tenaga pekerja = RM100/jam. Tentu kuantiti pesanan ekonomi (EOQ.)

(8 marks/*markah*)

c) Give five disadvantages of surface-mount devices (SMDS).

Beri lima kekurangan "surface-mount devices".

(5 marks/*markah*)

d) Sketch a typical diagram for the ESD protective workstation and worksurface and label the components.

Lakar gambarajah yang biasa digunakan untuk stesen dan permukaan kerja yang mempunyai perlindungan terhadap ESD serta label bahagian – bahagian tersebut.

(10 marks/*markah*)

QUESTION 2/SOALAN 2

a) State three types of Printed Circuit Board (PCB).

Senaraikan tiga jenis Papan Litar Bercetak (PCB).

(3 marks/*markah*)

b) Explain about the Printed Circuit Board (PCB) interms of structures, types and materials for PCBs.

Terang tentang Papan Litar Bercetak (PCB) dari segi struktur, jenis dan bahan yang digunakan untuk membuat PCB.

(10 marks/*markah*)

c) Base on figure of packaging hierarchy, explain about levels involve in that packaging hierarchy in large Electronic System.

Berpandukan gambarajah heraki pembungkusan, terang peringkat-peringkat di dalam setiap heraki pembungkusan di dalam Sistem Elektronik yang besar.

(12 marks/*markah*)

QUESTION 3/SOALAN 3

a) llustrate how to make a proper through hole solder joint on a PCB.

Gambarkan bagaimana untuk membuat pematerian di atas PCB menggunakan kaedah melalui lubang.

(11 marks/*markah*)

b) There are many types of soldering methods. Briefly explain about hand soldering methods.

Terdapat pelbagai jenis cara-cara pematerian. Terangkan secara ringkas tentang pematerian tangan.

(4 marks/*markah*)

c) Justify three common techniques to remove solder from a joint and explain one of the techniques.

Justifikasi tiga jenis teknik untuk menanggalkan penyambungan pematerian dan terangkan salah satu daripada teknik tersebut.

(10 marks/*markah*)

QUESTION 4/SOALAN 4

a) Define the definition of realibility.

Takrif definisi kebolehpercayaan.

(2 marks/*markah*)

b) Base on the bathtub Curve, explain about the failure rate.

Berdasar gambarajah 'Bathtub Curve', terangkan tentang kadar kegagalan.

(10 marks/*markah*)

c) State three types of assembly testing.

Nyata tiga jenis pengujian perhimpunan.

(3 marks/markah)

d) State the advantage and disadvantage of using Accelerated Life Test (HALT).

Nyata kebaikan dan keburukan Ujian Hayat Terpecut.

(10 marks/markah)

END OF QUESTION PAPER/KERTAS SOALAN TAMAT