**Universiti Teknologi Malaysia**

**DOKTOR KEJURUTERAAN/INDUSTRI/PENDIDIKAN KEJURUTERAAN**

***(DOCTOR OF ENGINEERING/INDUSTRIAL/ENGINEERING EDUCATION)***

**LAPORAN PENILAIAN TESIS/DISERTASI OLEH PEMERIKSA *(EXAMINER’S REPORT ON THESIS/DISSERTATION)***

|  |  |  |
| --- | --- | --- |
| Nama Calon :  *(Name of Candidate)*  Fakulti :  *(Faculty)* |  | Tajuk Tesis/Disertasi :  *(Title of Thesis/Dissertation)*  Tarikh Masuk :  *(Entry Date)* |

|  |  |  |  |
| --- | --- | --- | --- |
| Nama Pemeriksa dan Institusi :  *(Name of Examiner and Institution)* |  | Tempoh Pengajian sehingga  Tarikh Hantar Tesis/Disertasi :  *(Duration of Study until Thesis/Dissertation Submission Date)* |  |

# Sila tandatangan di dalam ruang yang disediakan UNTUK PERAKUAN tandatangan

(*Please sign in the space provided for the recommendation*) (*SIGNATURE)*

1. **Perakuan *(Recommendation)***

Setelah memeriksa tesis/disertasi, saya perakukan bahawa *(After examining the thesis/dissertation, I recommend that)*

a) Calon dianugerahkan ijazah Doktor Kejuruteraan/Doktor Falsafah *(The candidate be awarded the degree of Doctor of Engineering/Doctor of Philosophy)*;*…………………………………………………………………………………………………… \_\_\_\_\_\_\_\_*

atau *(or)* b1) Calon dianugerahkan ijazah Doktor Kejuruteraan/Doktor Falsafah setelah membuat pembetulan kecil kepada tesis/disertasi seperti yang disenaraikan dalam laporan ini dan disahkan telah berbuat demikian olehPenyelia *(The candidate be awarded the degree of Doctor of Engineering/Doctor of Philosophy subject to minor corrections as listed elsewhere in this report being made in the thesis/dissertation to the satisfaction of the Supervisor)*;*…………………………. \_\_\_\_\_\_\_\_*

atau *(or)* b2) Calon dianugerahkan ijazah Doktor Kejuruteraan/Doktor Falsafah setelah membuat pindaan dan pembetulan kepada tesis/disertasi seperti yang disenaraikan dalam laporan ini dan disahkan telah berbuat demikian oleh Pemeriksa Dalam/Luar *(The candidate be awarded the degree of Doctor of Engineering/Doctor of Philosophy subject to the amendments and corrections as listed elsewhere in this report being made in the thesis/dissertation to the satisfaction of the Internal/External Examiner(s))*;……………………*………………………………………………………………………………. \_\_\_\_\_\_\_\_*

atau *(or)* c) Calon tidak dianugerahkan ijazah Doktor Kejuruteraan/Doktor Falsafah tetapi dibenarkan menghantar semula tesis/disertasi untuk pemeriksaan setelah menjalani kajian dan penyelidikan lanjutan *(The candidate not be awarded the degree of Doctor of Engineering/Doctor of Philosophy but be permitted to resubmit the thesis/dissertation for further examination in a revised form after a further period of study and research)*;*…....................................................................... \_\_\_\_\_\_\_\_*

atau *(or)* d) Pencapaian calon tidak memuaskan untuk ijazah Doktor Kejuruteraan/Doktor Falsafah. Calon perlu mendaftar semula sebagai pelajar Sarjana Penyelidikan dan membuat pembetulan kepada tesis/disertasi seperti yang disenaraikan dalam laporan ini dan disahkan telah berbuat demikian oleh Pemeriksa Dalam/Luar *(The candidate not be awarded the degree of Doctor of Engineering/Doctor of Philosophy. The candidate will need to re-register as a Master of Research student and make corrections to the thesis as listed elsewhere in this report being made in the thesis/dissertation to the satisfaction of the Internal/ External Examiner(s);* ………………………………………………………………………………………….  *\_\_\_\_\_\_\_\_*

atau *(or)* e) Calon tidak dianugerahkan ijazah Doktor Kejuruteraan/Doktor Falsafah *(The candidate not be awarded the degree of Doctor of Engineering/Doctor of Philosophy)………………………………………………………………………………………… \_\_\_\_\_\_\_\_*

2. **Pendapat *(Opinion)***

Saya berpendapat *(In my opinion),*

*\** (Dibenarkan tanda (√) lebih daripada satu kriteria dibawah*/ You may tick (√) more than one criterion).*

a) Tesis/disertasi ini mengandungi banyak sumbangan kepada (*The thesis/dissertation has substantial contributions to*)

i) industri/organisasi (*industry/organisation*) …………………….…………………………………………………………  *\_\_\_\_\_\_\_\_*

ii) inovasi (*innovation*) …………………….………………………………………………………………………………..  *\_\_\_\_\_\_\_\_*

iii) pembangunan ilmu (*knowledge development*) …………………….…………………………………………………….  *\_\_\_\_\_\_\_\_*

b) Keaslian tesis/disertasi dibuktikan dengan penemuan fakta-fakta baharu *(The thesis/dissertation affords evidence of originality by the discovery of new facts)*; ……………………………………………………………………………………………. *\_\_\_\_\_\_\_\_*

c) Keaslian tesis/disertasi dibuktikan dengan kebolehan memberi kritikan yang bernas dan jelas *(The thesis/dissertation affords evidence of originality by the ability to give thoughtful and clear criticism);* …………………………………………….. *\_\_\_\_\_\_\_\_*

d) Tesis/disertasi ini memuaskan dari segi penyampaian *(The thesis/dissertation is satisfactory in regards to literary presentation);* …………………………………………………………………………………………………………………………… *\_\_\_\_\_\_\_\_*

e) Sebahagian besar dapatan kajian dalam tesis/disertasi sesuai untuk diterbitkan *(A significant amount of findings in the thesis/dissertation are worthy of publication);* ……………………………………………………………………………………….. *\_\_\_\_\_\_\_\_*

3. **Merit** *(Merit)*

Calon layak dianugerahkan ‘merit’ sekiranya keputusan pemeriksaan tesis/disertasi pada Bahagian 1 adalah A atau B1 */The candidate is qualified to be awarded with ‘merit’ provided that the result of thesis/dissertation examination in Part 1 is A or B1*).

Dalam membuat perakuan di atas, saya sahkan calon cemerlang untuk ijazah ini dan layak dianugerahkan ijazah dengan **merit**. (*In making the above recommendation, I consider that the candidate is outstanding for this degree and qualified to be awarded the degree with* ***merit****)………………………………………………………………………………………………………………………………… \_\_\_\_\_\_\_\_*

4. Sila berikan ulasan dan penilaian terhadap perkara berikut sebagai asas perakuan

*(Please provide your comments and assessment on the following items as the grounds for recommendation)*

\*Skala Pengukuran Seperti Berikut:

\**Scale of Assessment As Follows:*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **1** | **2** | **3** | **4** | **5** |
| Sangat Lemah  *Very Weak* | Lemah  *Weak* | Memuaskan  *Satisfactory* | Baik  *Good* | Cemerlang  *Excellent* |

|  |
| --- |
| 4.1 Tajuk Tesis/Disertasi *(Thesis/Dissertation Title)* |
|  |

|  |
| --- |
| 4.2 Abstrak *(Abstract*) |
|  |
| PLO5 (CS): Candidate demonstrates a good and concise abstractwriting. |
| \*Skala pengukuran/*Scale of assessment*: 1 2 3 4 5 |

|  |
| --- |
| 4.3 Pengenalan, Permasalahan Penyelidikan, Objektif, Skop, dll. *(Introduction, Research Problem, Objective, Scope, etc.)* |
|  |
| PLO1 (AKW): Candidate demonstrates critical understanding on Research Problem. |
| \*Skala pengukuran/*Scale of assessment*: 1 2 3 4 5 |

|  |
| --- |
| 4.4 Kajian Literatur *(Literature Review)* |
|  |
| PLO1 (AKW): The literature review is very comprehensive and describes relevant material. |
| \*Skala pengukuran/*Scale of assessment:* 1 2 3 4 5 |
| PLO2 (CG) - The literature review is critically connected with the purpose of the study. |
| \*Skala pengukuran/*Scale of assessment*: 1 2 3 4 5 |

|  |
| --- |
| 4.5 Metodologi/Bahan/Reka Bentuk dan Kaedah (Methodology/Material/Design and Methods) |
|  |
| PLO3 (PS): Candidate demonstrates a good mastery of practical skills and scientific skills through methodology/material/design and methods to solve complex research problems. |
| \*Skala pengukuran/*Scale of assessment*: 1 2 3 4 5 |

|  |
| --- |
| 4.6 Analisis dan Penyampaian Data/Keputusan *(Analysis and Presentation of Data/Findings)* |
|  |
| PLO5 (CS): Communicate effectively the knowledge, skills, ideas, and research findings using appropriate methods to peers, scholarly communities, and societies through various medium. |
| \*Skala pengukuran/*Scale of assessment*: 1 2 3 4 5 |
| PLO6 (DS): Use a broad range of information, media, and technology applications to support study or work. |
| \*Skala pengukuran/*Scale of assessment*: 1 2 3 4 5 |

|  |
| --- |
| 4.7 Perbincangan dan Interpretasi Keputusan Kajian *(Discussion and Interpretation of Research Results/Findings)* |
|  |
| PLO2 (CG): Critically discuss and synthesis the Research Results/Findings. |
| \*Skala pengukuran/*Scale of assessment*: 1 2 3 4 5 |
| PLO7 (NS): Interpret and Undertake critical evaluation of numerical and graphical data. |
| \*Skala pengukuran/*Scale of assessment*: 1 2 3 4 5 |

|  |
| --- |
| 4.8 Kepentingan Sumbangan kepada *(Significance of Contribution to)* |
| (i) industri/organisasi (*industry/organisation*)  (ii) inovasi (*innovation*)  (iii) pembangunan ilmu (*knowledge development*) |
| PLO2 (CG): Contribution towards advance knowledge (Scholarship of Knowledge). |
| \*Skala pengukuran/*Scale of assessment*: 1 2 3 4 5 |

|  |
| --- |
| 4.9 Gaya Penulisan *(Writing Style)* |
|  |
| PLO5 (CS): Communicate effectively through writing the knowledge, skills, ideas, and research findings to peers, scholarly communities, and societies. |
| \*Skala pengukuran/*Scale of assessment*: 1 2 3 4 5 |

|  |
| --- |
| 4.10 Kekuatan Tesis/Disertasi *(Strength of the Thesis/Dissertation)* |
|  |

|  |
| --- |
| 4.11 Kelemahan Tesis/Disertasi *(Weakness of the Thesis/Dissertation)* |
|  |

|  |
| --- |
| 4.12 Kepentingan Kajian *(Significance of the Study)* |
|  |

|  |
| --- |
| 4.13 Perakuan Penganugerahan *(Recommendation for the Award)* |
|  |

|  |
| --- |
| 4.14 Lain-lain ulasan *(Other comments)* |
|  |

……………………………………………

Nama Pemeriksa/*Name of Examiner:*

Tarikh/*Date* :