**Annex - A**

**Questionnaire – The concept of originality**

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| **Sno** | **Question** | **Description** |
| 1. | Is there a difference between research in general and research for the award of MS degree? (Yes/No). If yes, can you briefly state the difference? | The question was included to bifurcate research in general from academic research and whether the academic research is only to be undertaken at the Ph.D. level or at both Masters and Ph.D.? |
| 2. | Is there a difference between research in general and research for the award of Ph.D. degree? (Yes/No). If yes, can you briefly state the difference? | The question was included to bifurcate research in general from academic research and whether the academic research is only to be undertaken at the Ph.D. level or at both Masters and Ph.D.? |
| 3. | Should there be a difference in the method of evaluation of research for MS (Engineering) and MS/M.Phil (in other disciplines)? (Yes/No). If yes, can you briefly state the difference? | This question was included to evaluate the differences in definitions of originality in Masters theses across the disciplines because of the difference in nature of the contents of a particular discipline.  |
| 4. | Should there be a difference in the method of evaluation of research for Ph.D. (Engineering) and Ph.D. (in other disciplines)? (Yes/No). If yes, can you briefly state the difference? | This question was included to evaluate the differences in definitions of originality in doctorate theses across the disciplines because of the difference in the nature of the contents of a particular discipline. |
| 5. | Is there a difference in the concept of originality in MS and Ph.D.? (Yes/No) | This question was included to determine that is there any difference in the extent of originality at Masters and Ph.D. degrees. |
| 6. | If you answered yes to Q No.5, do you think that the difference lies in the quality of work? (Yes/No). (Give detailed comments in the space provided) | This question was included to find whether the difference in MS and Ph.D. thesis is related to the volume of work or quality. |
| 7. | If you answered no to Q No.5, do you think that the difference lies in the quantity of work? (Yes/No). (Give detailed comments in the space) | This question was included to find whether the difference in MS and Ph.D. thesis is related to the volume of work or quality. |
| 8. | Are the projects without any factor of research are acceptable at the MS level? (Yes/No) | The projects that do not include any factor of research are developed. This question will determine whether these projects are acceptable at the Master level. |
| 9. | Are the projects without any factor of research are acceptable at the Ph.D. level? (Yes/No) | The projects concluding at the development of applications or solving a social scenario. This question will determine whether these projects are acceptable at the doctorate level. |
| 10. | Is a survey considered to research at MS level if it contributes unique points of interest to the domain? | A thorough survey concluding at unique points of interest are acceptable as MS thesis or not. |
| 11. | Is a survey considered to research at the Ph.D. level if it contributes unique points of interest to the domain? | A thorough survey concluding at unique points of interest is acceptable as a Ph.D. thesis or not. |
| 12. | Is a unique application that doesn’t exist in the market considered to research at MS level? | Unique applications of existing theories are developed for market use. Are these applications acceptable as MS thesis? |
| 13. | Is a unique application that doesn’t exist in the market considered to research at Ph.D. level? | Unique applications of existing theories are developed for market use. Are these applications acceptable as Ph.D. thesis? |
| 14. | Should MS thesis contribute something to the body of knowledge? | Body of knowledge (BoK) of the domains are defined. Should every MS thesis contribute something to extend that Body of knowledge? |
| 15. | Should Ph.D. thesis contribute something to the body of knowledge? | Body of knowledge (BoK) of the domains is defined. Should every Ph.D. thesis contribute something to extend that Body of knowledge? |
| 16. | Contribution to the body of knowledge and originality are alternate terms? | Contribution to the body of knowledge is accredited to creativity and originality. Are these alternative terms or have different meanings? |
| 17. | If you answered No to Q 16, what is the difference? | The difference between both the terms is to be stated |
| 18. | 1. Put a tick and cross against each of the following. Which of the following are considered as original for MS and Ph.D..;
	* Contribution to the body of knowledge
	* A study with unique conclusions
	* An application of the theory which doesn’t exist before
	* A method/ algorithm/ procedure which doesn’t exist before and can be converted to an application in future
	* An attempt to develop a method/ algorithm/ procedure which resulted in failure and warned others not to proceed in the same direction again
	* An attempt to develop a method/ algorithm/ procedure which resulted in failure and doesn’t warn others to proceed in the same direction again
	* Combination of multiple existing methods of the domain in which degree is sought out which had never been combined in the same way in past
	* Combination of multiple existing methods of a domain other than the domain in which degree is sought out which had never been combined in the same way in past
	* An application of the method of domain A to a problem of domain B where the degree is claimed in domain A
* An application of the method of domain A to a problem of domain B where the degree is claimed in domain B
 | In this question, multiple concepts that exist in one form or another are given in the options list. The respondents are asked to pick one or many as more precisely defining the concept of originality in MS and Ph.D. |
| 19. | Is the definition of originality in research the same for MS in science and MS in engineering disciplines? (YES/NO) | Science and Engineering are two different domains and both have some specific requirements for undertaking research. Is the definition of originality in MS research of both is the same or different? |
| 20. | If you answered No to Q 19* + Which of the factors given in Q 18 define originality in MS (Science)?

Which of the factors given in Q 18 define originality in MS (Engineering) | The options list provided in Q 18 covered most of the existing definitions or concepts of originality. Which one of them is valid for MS Engineering? |
| 21. | Is the definition of originality in research the same for a Ph.D. in science and a Ph.D. in engineering disciplines? (YES/NO) | Science and Engineering are two different domains and both have some specific requirements for undertaking research. Is the definition of originality in Ph.D. research of both is same or different? |
| 22. | If you answered No to Q 21* + Which of the factors given in Q 18 define originality in Ph.D. (Science)?

Which of the factors given in Q 18 define originality in Ph.D. (Engineering) | The options list provided in Q 18 covered most of the existing definitions or concepts of originality. Which one of them is valid for Ph.D. Engineering? |
| 23. | 1. Which of the following is/ are true;
	* A research paper extracted from a part of MS thesis and published in a quality journal is sufficient for determining the originality of research work?
	* A research paper that is a true representative of one’s whole MS thesis published in a quality journal is sufficient for determining the originality of research work?
	* A research paper extracted from a part of MS thesis and presented in a reputed conference is sufficient for determining the originality of research work?
	* A research paper that is a true representative of one’s whole MS thesis published in a reputed conference is sufficient for determining the originality of research work?
 | This question is included to find the relationship between publishability and originality in MS theses. The question is also meant to determine the quality sources for publication of original content. |
| 24. | 1. Which of the following is/ are true;
	* A research paper extracted from a part of a Ph.D. thesis and published in a reputed journal is sufficient for determining the originality of research work?
	* A research paper that is a true representative of one’s whole Ph.D. thesis published in a reputed journal is sufficient for determining the originality of research work?
	* A research paper extracted from a part of the Ph.D. thesis and presented in a reputed conference is sufficient for determining the originality of research work?
	* A research paper that is a true representative of one’s whole Ph.D. thesis published in a reputed conference is sufficient for determining the originality of research work?
 | This question is included to find the relationship between publishability and originality in Ph.D. theses. The question is also meant to determine the quality sources for publication of original content. |
| 25. | Any Other Comments | Anything that worth determines the concept of originality. |

**Annex -B**

**Rationale of the questions added in the questionnaire given in Table 3**

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| **Question No (in Table 3)** | **Rationale** |
| Q.1 and 2 | The difference between the research conducted in the academics and industry is worked by (Vedovello, 1998), (Brew & Lucas, 2009), (cuhk.edu.hk/clear/rs/research\_in\_institutions.pdf) and cited in the literature review section. The questions are included to have peer’s input on its practical recognition. |
| Q.3, 4, 19, 20, 21, 22, 23 and 24 | The study conducted by Mallard et al. (2009) (cited in the literature review) considered research of a few domains different from others. Barlosius (2018) worked on the concept of originality in natural/medical sciences and engineering disciplines only and emphasized the difference in the concepts of the research in different domains. The questions are included to have peer’s input on its practical recognition.  |
| Q.5, 6, 7, 8, 9 , 18, 23 and 24 | Australian qualification framework (AQF) and Higher Education Commission Pakistan (HEC) specified the qualification of Masters's degree-research to be an application of an advanced body of knowledge in a range of contexts for research and scholarship. The specification of the doctoral degree includes applying a substantial body of knowledge to research, investigate and develop new knowledge (AQFC 2013) (HEC 2015) |
| Q.10, 11, 12, 13, 18, 19, 20, 21, 22, 23 and 24 | The definitions and concepts of originality as presented by different researchers in many papers referred in the literature review (Baptista et al., 2015) (Lovitts, 2007) (Clark & Lunt, 2014), (AHD, 2015), (Barlosius, 2018) among others, emerged the needs of classifying different forms of existing researches including but not limited to surveys, applications of a theory/ concept from Body of knowledge, critical reviews and many more into one of the non-research, academic research and industrial research classes.  |
| Q.14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24 | The definition of originality in thesis/dissertation is concluded above, after thorough review of multiple definitions and concepts of originality given in the literature. Contribution to the body of knowledge as a requisite for research is almost agreed among the researchers. These questions are framed to identify such contributions in the existing types of problems which are researched. |