

ISLAMIC UNIVERSITY OF TECHNOLOGY (IUT)
 ORGANISATION OF ISLAMIC COOPERATION (OIC)
DEPARTMENT OF TECHNICAL AND VOCATIONAL EDUCATION (TVE)

Semester Final Examination

Course No: TVE 4103

Course Title: Educational Psychology

Winter Semester (2018-2019)

Time : 3 hrs

Full Marks : 100

There are 8 (eight) questions. Answer any 6 (six).

Figures in the right margin indicate marks of the questions.

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| 1 | (a) What is educational psychology? Explain the theory of Jean Piaget. | 6.66 |
| | (b) Discuss aims and nature of educational psychology. Explain – how “ <i>Psychology is a mental process and study on human behavior</i> ”? | 10 |
| 2 | (a) What is meant by personality? Why many people don't know what is personality? | 6.66 |
| | (b) Discuss the factors which are affecting student's personality? | 10 |
| 3 | (a) What is meant by effective teacher? Explain. | 6.66 |
| | (b) How an effective teacher selects and organize learning material according to (i) interest, (ii) values and (iii) growth of the students. | 10 |
| 4 | (a) Define the term “Learning” in context of educational psychology. | 6.66 |
| | (b) What is the difference between learning and teaching? Discuss the purpose of teaching and learning in context of TVET? | 10 |
| 5 | (a) Discuss the value of motivation in the process of teaching and learning. | 6.66 |
| | (b) Differentiate extrinsic motivation and intrinsic motivation with example. | 10 |
| 6 | (a) What is Attitude? | 6.66 |
| | (b) Explain in detail the component of attitude model. | 10 |
| 7 | (a) What is meant by emotion? Distinguish positive and negative emotions with examples. | 6.66 |
| | (b) What are the factors affect emotional development of children? Discuss. | 10 |
| 8 | (a) What is meant by values? | 6.66 |
| | (b) What is value education? Discuss the necessities of value education. | 10 |

Programme: B.ScTE (2 Year)- 3rd Sem.)&
BScTE (1 Year)- 1st Sem.)

Date: Friday, May 24, 2019 (Group B)

ISLAMIC UNIVERSITY OF TECHNOLOGY (IUT)
ORGANISATION OF ISLAMIC COOPERATION (OIC)
DEPARTMENT OF TECHNICAL AND VOCATIONAL EDUCATION (TVE)

Semester Final Examination

Course No: TVE 4111

Course Title: Occupational Analysis & Course
construction

Winter Semester (2018-2019)

Duration: 3hour

Full Marks: 150

There are 8 (eight) questions. Answer any 6 (six). All questions carry equal marks.

Figures in the right margin indicate marks of the questions.

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|---|--|----|
| 1 | a) According to philosophers in Vocational Education, youth and adults should prepare only for careers that will fulfil their individual needs or careers that exist in sufficient numbers to accommodate them. Justify. | 10 |
| | b) What is meant by teacher accountability? | 5 |
| | c) How can teachers better prepare themselves to meet the demands of accountability? | 10 |
| 2 | a) What do we mean by a course of instruction? | 5 |
| | b) Why is it important for instructors/teachers to do a course of instruction during and before teaching? | 10 |
| | c) What should be considered before one proceeds to write a course of instruction? | 10 |
| 3 | a) The learning process has undergone considerable experimental research, but in the final analysis much depends on the teacher and teaching methods used. Depending on students' interests, aptitudes and capacities, some things will be learned quicker than others. In light of this, explain the basic learning principles that are particularly applicable to learning situations in Vocational and technical education? | 20 |
| | b) Why should a course plan be considered as a flexible rather than a rigid instrument of instruction? | 5 |
| 4 | a) What is the difference between a course of study and a course outline? | 5 |
| | b) What are the particular merits of a course outline? | 8 |
| | c) Describe the main content of a course outline with an example? | 12 |
| 5 | a) Mr. Saidi has been newly recruited as IT expert for IT globe Connect LTD and during his orientation, the manager highly emphasized on an extensive task analysis before designing any instructions for their employees. Unfortunately, he has a lot of confusion about task analysis. As occupational specialist, explain, to Mr. Said, what task analysis is and what exactly do instructional designers do when they conduct a task analysis? | 10 |
| | b) Discuss the task analysis inventory and its content? | 10 |

- 6 a) Elaborate the sequence of the task analysis process? 10
b) Prior to 1966, the military's task selection decisions were based on primarily on the basis of the subjective judgement of the officer in charge. In 1966, Tracy, Flynn, and Legere introduced the "*Criteria for task selection*" method to U. S army which has letter been adopted by many training institutions. Discuss the criteria task analysis as developed by Tracy in 1966. 15
- 7 a) Briefly describe the procedure for conducting task selection. 10
b) Fire house limited would wish to train its employees on how to counter a fire outbreak. Fire Fighter are involved with so many tasks including: cleaning the fire van, dressing up with appropriate gears, packaging basic first aids, investigation of fire scene, fire preventing, rescuing victims on site and documenting or reporting their exercise. Using the task selection criteria, develop task selection worksheet that will depict different scores for each task in relation to its criteria. Based on these totals for each task, prioritize the task on the scale and select those tasks that should be included in the formal training/instruction. 15
- 8 a) What is Occupation as defined by occupational therapist (OT)? 5
b) Explain any five areas of occupation as classified by Occupational Therapy Practice Framework. 10
c) With the help of a diagram, discuss the five meaning of occupational competence. 10

<<<<Best of Luck and Ramadhan Kareem >>>>

Programme: B.ScTE (2nd Year; 3rd Sem.)

Date: Friday, May 24, 2019 (Group B)

ISLAMIC UNIVERSITY OF TECHNOLOGY (IUT)
ORGANISATION OF ISLAMIC COOPERATION (OIC)
DEPARTMENT OF TECHNICAL AND VOCATIONAL EDUCATION (TVE)

Semester Final Examination

Course No: TVE 4117

Course Title: Curriculum Development, Administration and Supervision

Winter Semester (2018-2019)

Duration: 3 hours

Full Marks: 150

There are 8 (eight) questions. Answer any 6 (six).

Figures in the right margin indicate marks of the questions.

1.
 - a) Define Curriculum according to Finch & Crunkilton (1984). Finch (1984) also recommended additional concepts that a curriculum developer has to put into considerations. Explain. 10
 - b) Even though Technical and Vocation Education (TVE) is included within the overall framework of education, its (TVE) curriculum has certain characteristics that distinguish it from the rest of educational milieu. Discuss. 10
 - c) In the early foundation of curriculum development of TVET, apprenticeship was highly considered in most ancient countries like Palestine and Greece. Unfortunately, by sixteenth century apprenticeship began to decline steadily as a result of different alternatives considered. Discuss these different alternatives that were considered in place of apprenticeship. 5
2.
 - a) In a typical educational setting, the curriculum developer is confronted with a variety of factors that might affect the task of determining what should actually be taught. Examine any five the factors associated with determining curriculum content. 10
 - b) What is introspection, in light of curriculum development? 5
 - c) Describe, briefly, how introspection process is used in establishing (development of) a curriculum content? Explain why introspection is not always the most valid content determination process? 10
3.
 - a) TVE department wished to develop a curriculum for its new programme diploma in Electromechanical Technician with the help of DACUM approach. Explain how you will use DACUM approach to develop curriculum content. 10
 - b) State five steps used by the facilitator to guide the committee during DACUM process. 5
 - c) Briefly explain how critical incident technique is used in curriculum content development related to work values and attitudes. 10
4.
 - a) Identify the constraints related to curriculum development 10
 - b) State any three classification of curriculum materials, with example. 5
 - c) Assess the need for securing curriculum material. 10

Programme: B.ScTE (2nd Year; 3rd Sem.)

Date: Friday, May 24, 2019 (Group B)

- 5 a) A good curriculum material can assist an instructor in bringing about an intended desirable behavior change in individual student. Therefore, curriculum design should assess whether the materials meet the acceptable standards of the institution. In light of this, explain the acceptable standards of quality relating to the following areas: 5x3
- a. Content biasness
 - b. Readability
 - c. Principle of learning
- b) Illustrate how cloze procedure is used to measure the readability level of the curriculum materials. 10
- 6 With the unique nature of vocational and technical curriculum, the available materials might not be appropriate for an intended audience. Therefore, educators would be faced with the task of developing their own curriculum materials. Discuss the various stages involved in curriculum materials development process. 25
- 7 a) Explain the four areas where outside assistance (expertise) should be sought by an educationist while developing curriculum materials. 12
- b) As educators begin the task of curriculum material development, there are several crucial decisions to be made. Discuss. 8
- c) State the factors to consider while developing curriculum materials. 5
- 8 a) It's no doubt that philosophy appears to have had the greatest history of affecting curriculum decision. Briefly explain the implication of philosophy towards curriculum content development. 5
- b) Discuss the relationship between curriculum, instruction and teaching. 10
- c) What are the rationale for curriculum development in vocational and technical education? 10

ISLAMIC UNIVERSITY OF TECHNOLOGY (IUT)
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DEPARTMENT OF TECHNICAL AND VOCATIONAL EDUCATION (TVE)

Semester Final Examination**Course No: Hum 4117****Course Title: Islamic History and Culture****Winter Semester (2018-2019)****Duration: 3 hours****Full Marks: 150**

There are 8 (eight) questions. Answer any 6 (six)..
 Figures in the right margin indicate marks of the questions

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|----|---|----|
| 1. | Describe the concept and approaches of Civilization in Western and Islamic Traditions. | 25 |
| 2. | Narrate the spread of Islamic Civilization in Europe and West Asia. | 25 |
| 3. | a) What is meant by Renaissance? | 12 |
| | b) Discuss details of Islamic Impact on the Renaissance | 13 |
| 4. | Describe Muslim Influence upon European Scholarship and Learning | 25 |
| 5. | a) Narrate the "ottoman History". | 12 |
| | b) Discuss details of Ottoman Contribution to Islamic Civilization. | 13 |
| 6. | Write about the Causes for Decline of Scientific Thinking in Islamic History. | 25 |
| 7. | a) What is meant by Euro-centrism? | 12 |
| | b) What is the impact of Euro-centrism over the history of Science and Technology? | 13 |
| 8. | a) What is meant by Muslim Intellectual Responses? | 12 |
| | b) Discuss the contemporary Muslim Intellectual Responses in light of Science and Technology. | 13 |

Programme: BSc Engg (EEE) 1st Semester

Date: 25 May 2019, Saturday

ISLAMIC UNIVERSITY OF TECHNOLOGY (IUT)
ORGANISATION OF ISLAMIC COOPERATION (OIC)
DEPARTMENT OF TECHNICAL AND VOCATIONAL EDUCATION (TVE)

Semester Final Examination

Course No: Hum 4125

Course Title: Islamic History, Philosophy and Culture

Winter Semester (2018-2019)

Time : 3 hours

Full Marks : 150

There are 8 (eight) questions. Answer any six (6).

Figures in the right margin indicate marks of the questions.

1. a) Explain the importance of intelligence in Islam. 10
- b) Discuss the social and global impacts of *Zakaat* and *Hajj* and in light of al-Quran and *sunnah*. 15
2. Explain as to how the following secondary sources of Islamic Shariah could be utilized for the adaption of the Islamic Law in the contemporary world:
 - a) Legal stratagems (*Hiyal*).H 15
 - b) Intervention of the authority (*siyasa*). 10
3. a) Discuss the basic criteria to be met by an individual to deal with the wealth in light of al-Quran: 10
- b) Prove the legitimacy of *Mudaraba* system in light of the following:
 - I) Practice of the Prophet (S.M.) before and after his Prophet hood. 10
 - II) Public interest and motivation. 5
4. a) Discuss opinion of the scholars regarding the scientific miracles of al-Quran. 15
- b) Explain any two of the scientific phenomena in light of the Quranic verses. 10
5. a) Give a brief description of the subject matters of *Kitab al Ibar*. 15
- b) Analyze ibn-Khaldouns point of view regarding the theory of influence of the climate in the modern perspective. 10
6. a) Write a short and analytical essay on the development of Muslim navigation system during the rule of the rightly guided caliphs. 10
- b) Discuss the role of Muslims in the development of Geography. 15
7. a) Discuss the notion of "Sustainable Development in light of al-Quran and Sunnah. 7
- b) The developed countries nowadays are opting for clean energy. Why do you think that OIC member countries should try to do so as well? 5
- c) How the long abandoned *Seistan* type wind mills can help us to do so? 10
- d) What is the opinion of the western experts regarding this revival? 3
8. Write short notes on the following:
 - a) Brethren of sincerity (*Ikhwanus-safa*) 8
 - b) Muslim numerals 10
 - c) Masjid *al-Aqsa* 7

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DEPARTMENT OF TECHNICAL AND VOCATIONAL EDUCATION (TVE)

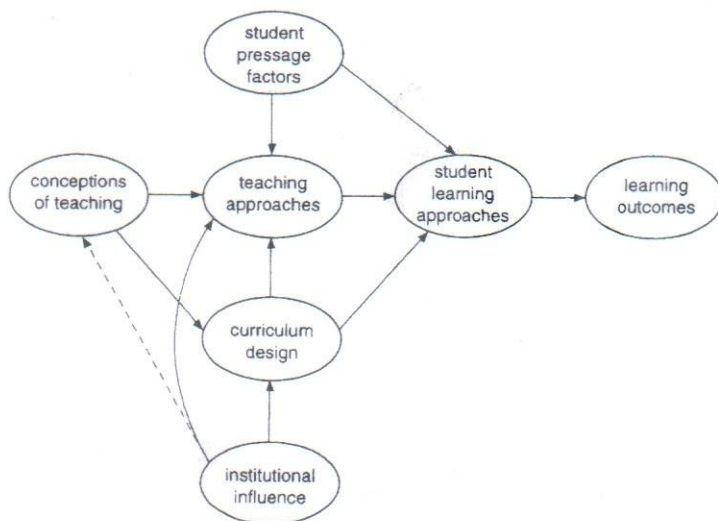
Semester Final Examination

Course No: TVE 4125/4127

Course Title: Methods and Techniques of Teaching

Winter Semester (2018-2019)**Time** : 3 hours**Full Marks** : 150**There are 8 (eight) questions. Answer any 6 (six).**Figures in the right margin indicate marks of the questions.

1. a) Clarify meaning of each term in relation to technical education: 18
 - (i) Teacher-centered and student-centered teaching; and
 - (ii) Surface level and deep level of student learning.
- b) Is there any link (relationship) found between above stated teaching and learning approach? Elaborate your answer. 07
2. a) What would be the best qualities of a *good student* in technical education? Provide 10 your answers by supporting reasons of identifying these qualities.
- b) How students' learning outcomes are connected to other components as shown in the 15 following diagram. Elaborate your answer in relation to technical education.



3. a) Why do you need to use different teaching aids for TVET? 07
- b) What are the key benefits of using *power point* as a teaching aid in technical education? 10
- c) How do you prepare an effective *power point lecture* in your teaching? 08
4. a) You are recruited as a lecturer of department of technical education of your country 3+ and you are planning to start your teaching from the first semester of academic year 12 2019-2020. What are the teaching methods, will you be considered as a novice teacher? Discuss **Characteristics** that are essential for ensuring **Quality Lecture** in your classroom.
- b) Identify advantages and disadvantages of independent learning. 10

5. a) List down ICT tools that could be used in ICT-enhanced teaching approach of “student-focused, facilitation-oriented strategy with the intention of creating active learning opportunities for developing students’ understanding”. 07
- b) Considering the teaching approach: ‘student-focused, industry-oriented strategy with the intention of developing students’ knowledge and skills to meet industry’s needs’, answer the following issues: 18
- The role of teachers;
 - The role of students;
 - Give your answer in relation to its usefulness for improving teaching and learning practices in IUT.
6. Prepare a complete lesson plan by choosing a topic from your discipline (specialization). The main focus point of your answer is guided by the following steps: 25
- Introduction
 - Presentation
 - Application/activity
 - Summary
 - Evaluation
7. a) Discuss impact of ICT on teachers and teaching practices. 09
- b) Consider, you are an Education Minister of your country and would like to incorporate ICT in your education system. What are the major constrains (difficulties) that you may face while you intend to integrate ICT in your education system? Explain in relation to the following headings: 16
- (i) Teacher- level barriers;
 - (ii) System – level barriers.
8. a) Distinguish between intrinsic and extrinsic motivation. 09
- b) Elaborate the following key aspects that enhance students motivation towards classroom teaching and learning: 16
- (i) Students participation;
 - (ii) Reward;
 - (iii) Satisfy students learning;
 - (iv) Visual learning;
 - (v) Use positive emotion to enhance students’ learning and motivation.

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DEPARTMENT OF TECHNICAL AND VOCATIONAL EDUCATION (TVE)

Semester Final Examination

Course No: HUM 4137

Course Title: Islamiat

Winter Semester (2018-2019)

Time: 3:00 hours

Full Marks: 100

There are 8 questions. Answer question no. 1 and choose any 5 from the other 7 questions.

Figures in the right margin indicate marks of the questions.

1. a) Discuss the family system of Islam on the basis of 'Marriage is the nucleus of family system in Islam'. Highlight the Islamic measures for the smooth conduct of any marriage. 9
- b) 'Allah ordains you to worship Him and Show *Ihsaan* to the Parents', said Allah. Discuss the rights of the parents in light of this Quranic Verse and many Prophetic Statements. 11
2. a) 'Whoever reposes his faith in Allah and the Hereafter should maintain good relation with the relatives', explain the rights and responsibilities of the relatives in light of this *hadīth*. 8
- b) 'Your servants are your brothers', said the Prophet. If it is so then how shall you behave Islamically with your servants/employees/subordinates? Explain. 8
3. a) 'Islam advocates equitable distribution of wealth', discuss this basic principle in the light of Islamic economic system. 7
- b) You want to initiate a business enterprise, what are the areas you should consider as '*halāl* business' areas and what are the areas you should avoid as '*harām* business areas'? What are the principles on the basis of which something is declared as '*halāl*' or '*harām*'? Discuss. 9
4. a) "Say! Allah is *Ahad...*", the *Sūrah al-Ikhlās* of the Qur'an is the quintessence of *Tawhīd* of Allah, how shall you explain *Tawhīd*? Discuss all categories of *Tawhīd* in details. 8
- b) '*Shirk* with Allah is an unforgivable sin; still many Muslims are committing it in different dimensions', discuss these dimensions of *Shirk* along with meaning and categories. 8
5. a) "*Salāt* is the defining line between Islam and *kufr*", discuss different aspects of the significance of *Salāt* on the basis of this *hadīth*. 9
- b) 'You should perform *Salāt* as you see me performing *Salāt*', said the Prophet (saas). Explain the Prophet way of performing *Salāt*. 7
6. a) 'Jihad is stated by the Prophet (saas) as the highest pinnacle of virtue in Islam, but this is the most misunderstood Islamic term'; what is then the true meaning of Jihad? Do you think that Islam was spread at force? Give your arguments. 9
- b) 'Environmental protection is the greatest concern of today's world, and despite all movements and measures the danger is becoming greater everyday'; how can the viewpoints of Islam kill this problem? Give an outline of Islamic protection of environment. 7
7. a) 'Zakat is the most practical measure for poverty eradication', do you agree? Discuss the importance of Zakat and its role for poverty eradication highlighting the recipients of Zakat. 8
- b) 'Zakat al-Fitr is a means of purification for the fasters and provision for the poor', discuss the importance and ruling of Zakat at Fitr in the light of this statement of the Prophet (saas). 8
8. a) 'Fasting has been prescribed by Allah for inculcating *taqwa* in human minds' how does it do so? Explain the types, obligatory, prohibited and despicable acts, and breakers and non-breakers of fasting. 8
- b) 'Hajj is the annual Conference of the Islamic Ummah', discuss this highlighting the importance of Hajj and its basic performances. 8

ISLAMIC UNIVERSITY OF TECHNOLOGY (IUT)
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DEPARTMENT OF TECHNICAL AND VOCATIONAL EDUCATION (TVE)

Semester Final Examination**Course No:** TVE 4141**Course Title:** History of Technical and Vocational Education**Winter Semester (2018-2019)****Time** : 3 hours**Full Marks** : 150

There are 8 (eight) questions. Answer any 6 (six).

Figures in the right margin indicate marks of the questions.

1. Describe the 'Russian System of Manual Training' developed by Victor Della-Vos. Particularly you should focus on the principles on which it is based and the characteristics of the system. 25
2. a) Describe the present state of French TVET Systems. You should include formal, and non-formal and informal TVET systems. 10
 b) Illustrate how French TVET Systems are governed and financed. Discuss the qualification requirement of a TVET teacher in French? 15
3. a) Describe the Apprenticeship Training in the Dual System in Germany. 20
 b) State different types of teachers and trainers in German Dual system VET. 5
4. Bangladesh is taking several measures to improve the quality of TVET and increase the enrolment in TVET programs. Describe the TVET System of Bangladesh. 25
5. a) Discuss the manual arts and vocational education during the medieval period by focusing on the attitudes of the Greeks and Christians. 15
 b) Describe the education and social reforms done by Martin Luther (1483-1546 AD). 10
6. a) Briefly discuss the history of the educational Sloyd of Scandinavia. 15
 b) State the goals/ aims of Sloyd according to Solomon. 10
7. a) Discuss history and development of the TVET system in Malaysia. 15
 b) Does the present TVET system in Malaysia need to be updated? How, discuss? 10
8. a) Briefly discuss the TVE in the Republic of Ivory Coast. 15
 b) Describe the TVET teacher training in Ivory Coast. 10

ISLAMIC UNIVERSITY OF TECHNOLOGY (IUT)
ORGANISATION OF ISLAMIC COOPERATION (OIC)
DEPARTMENT OF TECHNICAL AND VOCATIONAL EDUCATION (TVE)

Semester Final Examination
Course No: TVE 4143
Course Title: Comparative Education

Winter Semester (2018-2019)
Time: 3:00 hours
Full Marks: 150

There are 08 (Eight) questions. Answer any 06 (Six).
Figures in the right margin indicate marks of the questions.

1. (a) Define comparative education as viewed by Dr. Nicholas Hans. Explain different purposes of comparative education. 15
(b) Discuss briefly advantages of studying of comparative education. 10
2. Suppose you are an educationist of your country, the higher authority has assigned a task to update or modify the education system of your county. For that purpose, what are the factors you need to consider to update or modify the education system of your county? Briefly explain each of the factors that influence in the education. 25
3. (a) Why different methods are used for studying of comparative education? Explain briefly each of these methods. 15
(b) Explain briefly historical review of comparative education. 10
4. (a) Explain the Structure of UK education system with appropriate diagram. 10
(b) State the salient features of UK education system. 10
(c) Discuss briefly needs of teacher training in UK education system. 5
5. (a) State the objectives of France Education system? Explain the structure of France education system with appropriate diagram. 15
(b) Discuss briefly the salient features of France education system. 10
6. (a) What are the aims of education in USA? Explain the level of USA education system with structural diagram. 15
(b) State the salient features of USA education system. 10
7. (a) What are the importance of community colleges in USA education? Discuss briefly functions of the community colleges in USA education system. 10
(b) How did the teacher education develop in USA? 5
(c) Compare technical and vocational education system of USA and UK. 10
8. (a) Explain briefly TVET system of your own country. 10
(b) What are the problems that you are facing in your current TVET system? Discuss. How can you improve technical and vocational education in your own country? 15

Programme: B.Sc. Engg (CSE/SWE) (1st Semester)

Date: Friday, May 17, 2019 (Group A)

ISLAMIC UNIVERSITY OF TECHNOLOGY (IUT)
ORGANISATION OF ISLAMIC COOPERATION (OIC)
DEPARTMENT OF TECHNICAL AND VOCATIONAL EDUCATION (TVE)

Semester Final Examination

Course No: HUM 4145

Course Title: Islamiyat

Winter Semester (2018-2019)

Time: 3:00 hours

Full Marks: 100

There are 8 questions. Answer question no. 1 and choose any 5 from the other 7 questions.

Figures in the right margin indicate marks of the questions.

1. a) 'Marriage is the nucleus of family system in Islam', how is it so? Discuss the position of marriage in Islam as well as the Islamic measures for the smooth conduct of any marriage. 9
- b) 'Allah's pleasure and displeasure are rested upon the pleasure and displeasure of the parents', said the Prophet. Discuss the rights of the parents in light of this *hadīth*. 11
2. a) 'Whoever reposes his faith in Allah and the Hereafter should maintain good relation with the relatives', explain the rights and responsibilities of the relatives in light of this *hadīth*. 8
- b) 'The human beings are brothers to each other', said Islam. Discuss the social system of Islam where everyone's rights are preserved and responsibilities are distinctly maintained. 8
3. a) 'Islam advocates equitable distribution of wealth', discuss this basic principle in the light of Islamic economic system. 7
- b) 'Zakat is the most practical measure for poverty eradication', do you agree? Discuss the importance of Zakat and its role for poverty eradication highlighting the recipients of Zakat. 9
4. a) "Say! Allah is *Ahad...*", the *Sūrah al-Ikhlās* of the Qur'an is the quintessence of *Tawhīd* of Allah, how shall you explain *Tawhīd*? Discuss all categories of *Tawhīd* in details. 8
- b) '*Shirk* with Allah is an unforgivable sin; still many Muslims are committing it in different dimensions', discuss these dimensions of *Shirk* along with meaning and categories. 8
5. a) "*Salāt* is the defining line between Islam and *kufṛ*", discuss different aspects of the significance of *Salāt* on the basis of this *hadīth*. 9
- b) 'You should perform *Salāt* as you see me performing *Salāt*', said the Prophet (saas). Explain the Prophet way of performing *Salāt*. 7
6. a) 'Jihad is stated by the Prophet (saas) as the highest pinnacle of virtue in Islam, but this is the most misunderstood Islamic term'; what is then the true meaning of Jihad? Do you think that Islam was spread at force? Give your arguments. 9
- b) 'Environmental protection is the greatest concern of today's world, and despite all movements and measures the danger is becoming greater everyday'; how can the viewpoints of Islam kill this problem? Give an outline of Islamic protection of environment. 7
7. a) 'Hajj is the annual Conference of the Islamic Ummah', discuss this highlighting the importance of Hajj and its basic performances. 8
- b) 'Fasting has been prescribed by Allah for inculcating *taqwa* in human minds' how does it do so? Explain the types, obligatory, prohibited and despicable acts, and breakers and non-breakers of fasting. 8
8. a) 'Islam deprives women of their share of rights', alleges the anti-Islam segments; do you agree? Discuss the position and rights of women granted by Islam. 8
- b) 'Islam is the genuine preserver of human rights', how does it then preserve the human rights? Explain the basic pillars of human rights protection in Islam along with a picture of the status of human rights under the custody of the so-called human rights champions. 8

Library 241

Programme: BSc. Engg (CSE) (1st Semester)

Date: Saturday, May 25, 2019 (Group A)

ISLAMIC UNIVERSITY OF TECHNOLOGY (IUT)
ORGANISATION OF ISLAMIC COOPERATION (OIC)
DEPARTMENT OF TECHNICAL AND VOCATIONAL EDUCATION (TVE)

Semester Final Examination

Winter Semester (2018-2019)

Course No: HUM 4147

Time : 3 hours

Course Title: Technology, Environment and Society

Full Marks : 150

There are 8 (eight) questions. Answer any 6 (six).

All questions carry equal marks. Figures in the right margin indicate marks of the questions.

1. a) Define ecosystem. What are the types of ecosystem function? 05
b) Write a short note on Ecosystem Services. 10
c) Define Biodiversity. What are the necessary elements of a rich biodiversity in an ecosystem? Explain with example. 10
2. a) Define carrying capacity of an ecosystem. Explain carrying capacity of a pond ecosystem with necessary illustration(s). 10
b) Explain the term Environmental Justice with example. 05
c) Why is Environmental Stewardship important for environmental protection? Explain the core principles of Environmental Stewardship. 10
3. a) Why does the curve of temperature fluctuate in various layers of atmosphere? Explain with appropriate drawings. 10
b) List out the consequences of Global Warming on Earth. What are the actions can be taken to reduce the adverse impact of Global Warming? 10
c) Write a short note on 'Acid Precipitation'. 05
4. a) Name seven theories of Climate Change. 05
b) Various researches revealed that, concentration of carbon dioxide in atmosphere in the last 50 years (1960-2010) increased from 310 ppm to 390 ppm. Mention the reasons behind this increase. 10
c) Describe the impacts of air pollution on livelihood and environment. 10
5. a) Describe Hydrological/Water cycle with necessary illustration. 10
b) Define Water Quality. Explain natural process of water quality management by using SAG Curve. 10
c) Define point water pollution and non-point water pollution with appropriate examples. 05
6. a) Write short notes on the following: 5x3
i) Waste Hierarchy
ii) Polluter Pays Principle
iii) 3R(s) in Waste Management

- b) What are the main types of Renewable energy sources? Write the Pros and Cons of Renewable Energy. 10
7. a) Write down major environmental concerns of today's world. What are the impact areas of a Cyclone on the coastal communities? 10
- b) Write short notes of the following: 5x3
- i) Kyoto Protocol
 - ii) Carbon Footprint
 - iii) Carbon Trading
8. a) Define risk, hazard, vulnerability and coping capacity in the face of natural disaster. Give example of each terminology from your understanding. 10
- b) Give a list of Ecologically Critical Areas under the Bangladesh Environmental Conservation Rules, 1997. 05
- c) Write short notes of the following: 5x2
- i) Urban Heat Island
 - ii) Biodiversity Conservation

Programme: BSc.TE,(2-Year, 1st Sem.)

Date: Monday 20 May, 2019 (Group -A)

**ISLAMIC UNIVERSITY OF TECHNOLOGY (IUT)
ORGANISATION OF ISLAMIC COOPERATION (OIC)
DEPARTMENT OF TECHNICAL AND VOCATIONAL EDUCATION (TVE)**

Semester Final Examination

Course No. : Hum 4151

Course Title: Social Studies and Accounting

Winter Semester 2018-2019

Time : 3 hours.

Full Marks : 150

There are two parts; **Part 'A'** and **Part 'B'**. **Use separate answer scripts for each part.**

There are 4 (four) questions in each part. Answer any 3 (three) from each part.

Figures on the right margin indicate marks of the question

Part A: Social Studies

- | | | |
|----|---|----|
| 1. | a) Discuss the origin and evolution of "State" in western tradition. | 10 |
| | b) Explain the concept and essentials of a State in Islam. | 10 |
| | c) What are the major components of a State? | 5 |
| 2. | a) Write the definition and importance of 'Social Thought'. | 5 |
| | b) Describe the major works and contributions of Max Weber . | 10 |
| | c) Briefly discuss the major works and contributions of Karl Marx/Ibn Kaldun . | 10 |
| 3. | a) Define the term 'Social Norms'. | 10 |
| | b) Discuss the definition, function and aspects of Values. | 10 |
| | c) Compare the term 'Norms' and 'Values'. | 5 |
| 4. | Write short notes on the followings: | |
| | a) UNO | 8 |
| | b) OIC | 9 |
| | c) IDB | 8 |

Part B: Accounting

- | | | |
|----|--|----|
| 1. | a) What is accounting cycle? Briefly explain the cycle. | 10 |
| | b) What is accounting equation? What are the components of accounting equation?
How does owner's equity change? | 5 |

- c) Selected transactions from the journal of 'Darren Summy Sports Accessories Enterprise' are presented below:

Date	Account Titles and explanation	Reference	Debit Tk	Credit Tk
2018 Jan 1	Cash A/C Dr Darren Summy, Capital A/C Cr		5,00,000	5,00,000
Jan 5	(Cash investment made by the owner)		1,00,000	1,00,000
Jan 10	Purchase A/C Dr Cash A/C Cr (Purchase of products for cash)		10,000	10,000
Jan 30	Cash A/C Dr Sales A/C Cr (cash sales made by the business)		5000	5000
	Advertising expense A/C Dr Cash A/C Cr (paid advertising expense for cash)			

5

5

Requirements:

1. Prepare necessary ledger accounts in the books of Darren Summy Sports Accessories Enterprise.
 2. Prepare a trial balance and check the mathematical accuracy of the accounts.
2. a) Yeasir Arafat is a chartered accountant. He opened a business named 'Arafat Accounting Service' on 1 May, 2019. During the first month of operations of his business the following transactions occurred.
- May 1 Arafat invested 500,000 Taka cash in the business.
- May 2 Hired an office manager at a salary of 20,000 Taka per month.
- May 3 Purchased office supplies of 50,000 Taka on account from Saddam Supply Company.
- May 7 Paid office rent of 20,000 Taka for the month.
- May 11 Completed the task of preparation of final accounts and billed client 30,000 Taka for services provided. The bill is due in 3 months.
- May 30 Paid office manager 20,000 Taka for the month.
- May 31 Paid 40% of balance due to Saddam Supply Company.

Requirements:

- 1) Prepare necessary journal entries in the books of Arafat Accounting Service' 8
5
- 2) Prepare necessary ledger accounts [T Accounts] 5
- 3) Prepare a trial balance on 31 May and show the arithmetic accuracy of the accounts.
- b) What is trial balance? What are the benefits of preparing trial balance? Do you find any limitation of trial balance?
3. a) From the following balances of ABC Ltd, Prepare a Balance Sheet as on 31st December, 2018 15

Particulars	Amount (Dr.)	Amount (Cr.)
Plant and machinery	8,00,000	
Land and Building	6,00,000	
Furniture	1,50,000	
Cash in Hand	20,000	
Bank Overdraft		1,80,000
Accounts receivable	3,20,000	
Accounts payable		2,40,000
Bills Receivable	1,00,000	
Bills payable		60,000
Inventory	4,00,000	
Investments (Short-term)	80,000	
Capital		15,00,000
Drawings	1,30,000	
Net Profit		6,20,000
	26,00,000	26,00,000

- b) What is double entry book keeping system? What are the benefits of it? 5
- c) Write down the differences between journal and ledger. 5
4. Mohammad Yusuf started an accounting firm named 'Yusuf Accounting Service' on 1 January 2018. Following is the trial balance of Yusuf Accounting Service at the end of first year of operation.

Yusuf Accounting Service
Trial balance
For the year ended December 31, 2018

Account title	Debit	Credit
Cash	11500	
Accounts receivable	23600	
Prepaid insurance	1400	
Land	56000	
Building	106000	
Equipment	49000	
Accounts payable		10400
Insurance payable		2800
Mortgage payable		100000
Yusuf, capital		120000
Yusuf, drawing	18000	
Service revenue		75600
Rent revenue		26200
Salaries expense	35000	
Advertising expense	17000	

Utilities expense	15800	
Insurance expense	1700	
Depreciation expense- building	2500	
Accumulated depreciation- building		2500
Depreciation expense- equipment	3900	
Accumulated depreciation- equipment		3900
Interest expense	9000	
Interest payable		9000
Total	<u>350400</u>	<u>350400</u>

Requirements:

- Prepare an income statement for the year ended December 31, 2018.
- Prepare an owner's equity statement for the year ended December 31, 2018.
- Prepare a balance sheet as on December 31, 2018.

10
5
10

Programme: DTE (1st Semester)

Date: Thursday, May 23, 2019 (Group A)

ISLAMIC UNIVERSITY OF TECHNOLOGY (IUT)
ORGANISATION OF ISLAMIC COOPERATION (OIC)
DEPARTMENT OF TECHNICAL AND VOCATIONAL EDUCATION (TVE)

Semester Final Examination

Winter Semester (2018-2019)

Course No: TVE 4151

Time: 3: 00 hours

Course Title: Technical & Vocational Education Ethics & Society

Full Marks: 150

There are 8 (eight) questions. Answer any 6 (Six).
Figures in the right margin indicate marks of the questions.

- | | | |
|-------|--|----|
| 1. a) | Define moral and ethics. How do they differ from each other? | 10 |
| b) | How do moral and ethics are related to workplace? | 5 |
| c) | What are the key moral responsibilities of a worker? Discuss. | 10 |
| 2. a) | What is conscience? Discuss the functions of conscience with examples. | 10 |
| b) | 'A worker in a company sees a tempting equipment in a place that he could easily steal. He knows that it would be wrong to steal'. – Explain the state of worker's mind in view of the meaning and functions of conscience. | 15 |
| 3. a) | What is teleological ethical theory? Classify the ethical theories that have been developed under teleological ethics. | 10 |
| b) | Discuss the benefits of utilitarian approach to the society. What are the limitations of the ethical theory? | 15 |
| 4. c) | Discuss two moral traditions that have developed under the doctrine of hedonism. | 10 |
| d) | What is descriptive egoism and prescriptive egoism? How do they differ from descriptive altruism and prescriptive altruism? | 15 |
| 5. a) | Briefly discuss the principles of divine command theory. How divine command theory helps humanity to be built on integrity towards the welfare of the society. | 25 |
| 6. a) | Discuss the moral dimensions of technical and economic decision of organization? | 15 |
| b) | Briefly explain the steps involved in resolving ethical dilemmas. | 10 |
| 7. a) | What is Code of Ethics (COE)? Briefly discuss essential roles in COE in an organization. | 15 |
| b) | What are the limitations of code of ethics? | 10 |
| 8. c) | What is mnemonic device? to make COE as a succinct, salient, and memorable mnemonic device? What steps need to be followed. | 10 |
| a) | Suppose you are responsible to make a mnemonic device for a mobile company. Choose a word with at least five letters to make a mnemonic device for the mobile company. Explain how your mnemonic device represent the moto of the company. | 15 |

ISLAMIC UNIVERSITY OF TECHNOLOGY (IUT)
ORGANISATION OF ISLAMIC COOPERATION (OIC)
DEPARTMENT OF TECHNICAL AND VOCATIONAL EDUCATION (TVE)

Semester Final Examination

Course No: Hum 4157

Course Title: Islamiyat

Winter Semester (2018-2019)

Time: 3:00 hours

Full Marks: 100

There are 8 questions. Answer question no. 1 and choose any 5 from the other 7 questions.

Figures in the right margin indicate marks of the questions.

1. a) Discuss the family system of Islam on the basis of 'Marriage is the nucleus of family system in Islam'. Highlight the Islamic measures for the smooth conduct of any marriage. 9
- b) 'Allah ordains you to worship Him and Show *Ihsaan* to the Parents', said Allah. Discuss the rights of the parents in light of this Quranic Verse and many Prophetic Statements. 11
2. a) 'Whoever reposes his faith in Allah and the Hereafter should maintain good relation with the relatives', explain the rights and responsibilities of the relatives in light of this *hadīth*. 8
- b) 'Muslim Society is the most coherent society', claims Islam. What do you think? Discuss the Islamic Social System where everyone is safeguarded and responsible to each other. What is the relation between the members of a given society in Islamic Social System? Explain. 8
3. a) 'Islam advocates equitable distribution of wealth', discuss this basic principle in the light of Islamic economic system. 7
- b) You want to initiate a business enterprise, what are the areas you should consider as '*halāl* business' areas and what are the areas you should avoid as '*harām* business areas'? What are the principles on the basis of which something is declared as '*halāl*' or '*harām*'? Discuss. 9
4. a) "Say! Allah is *Ahad...*", the *Sūrah al-Ikhlās* of the Qur'an is the quintessence of *Tawhīd* of Allah, how shall you explain *Tawhīd*? Discuss all categories of *Tawhīd* in details. 8
- b) '*Shirk* with Allah is an unforgivable sin; still many Muslims are committing it in different dimensions', discuss these dimensions of *Shirk* along with meaning and categories. 8
5. a) "*Salāt* is the defining line between Islam and *kufr*", discuss different aspects of the significance of *Salāt* on the basis of this *hadīth*. 9
- b) 'You should perform *Salāt* as you see me performing *Salāt*', said the Prophet (saas). Explain the Prophet way of performing *Salāt*. 7
6. a) '*Jihad* is stated by the Prophet (saas) as the highest pinnacle of virtue in Islam, but this is the most misunderstood Islamic term'; what is then the true meaning of *Jihad*? Do you think that Islam was spread at force? Give your arguments. 9
- b) 'Environmental protection is the greatest concern of today's world, and despite all movements and measures the danger is becoming greater everyday'; how can the viewpoints of Islam kill this problem? Give an outline of Islamic protection of environment. 7
7. a) 'Zakat is the most practical measure for poverty eradication', do you agree? Discuss the importance of Zakat and its role for poverty eradication highlighting the recipients of Zakat. 8
- b) 'Zakat al-Fitr is a means of purification for the fasters and provision for the poor', discuss the importance and ruling of Zakat at Fitr in the light of this statement of the Prophet (saas). 8
8. a) 'Fasting has been prescribed by Allah for inculcating *taqwa* in human minds' how does it do so? Explain the types, obligatory, prohibited and despicable acts, and breakers and non-breakers of fasting. 8
- b) 'Hajj is the annual Conference of the Islamic Ummah', discuss this highlighting the importance of Hajj and its basic performances. 8

Programme: BSc Engg, MCE. 3rd Sem.

Date: Saturday, May 25, 2019 (Group -A)

ISLAMIC UNIVERSITY OF TECHNOLOGY (IUT)
ORGANISATION OF ISLAMIC COOPERATION (OIC)
DEPARTMENT OF TECHNICAL AND VOCATIONAL EDUCATION (TVE)

Semester Final Examination

Course No: : Hum 4317

Course Title: Social Studies and Accounting

Winter Semester 2018-2019

Time : 3 hours.

Full Marks : 150

There are two parts; **Part 'A'** and **Part 'B'**. **Use separate answer scripts for each part.**

There are 4 (four) questions in each part. Answer any 3 (three) from each part.

Figures on the right margin indicate marks of the question

Part A: Social Studies

- | | | |
|----|--|----|
| 1. | a) Brief about the concept and definition of a State | 10 |
| | b) What is meant by the term 'Nation' and 'Nation State'? Discuss. | 10 |
| | What are the major elements of a State? | 5 |
| 2. | a) Define the meaning of 'Social Thought'. | 5 |
| | b) Discuss major works and contributions of Auguste Comte . | 10 |
| | c) Explain major works and contributions of Herbert Spencer . | 10 |
| 3. | a) Define the term 'Social Norms'. | 10 |
| | b) Describe the definition, functions and aspects of Values. | 10 |
| | c) Compare the term 'Norms' and 'Values'. | 5 |
| 4. | Write short notes on the followings: | |
| | a) UNO | 8 |
| | b) OIC | 9 |
| | c) IDB | 8 |

Part B: Accounting

- | | | |
|----|---|---|
| 1. | a) What is meant by journal entry? What is the difference between journal and ledger? | 5 |
| | b) What is accounting equation? What are the components of it? How does owner's equity change? | 5 |
| | c) What is trial balance? What are the benefits of trial balance? Do you find any limitations of it? If yes, Discuss. | 5 |

Selected transactions from the journal of 'Mushfiq Auditing Service' are presented below:

Date	Account Titles and explanation	Reference	Debit Tk	Credit Tk
2018 Jan 1	Cash A/C Dr Mushfique, Capital A/C Cr		100,000	1,00,000
Jan 5	(Cash investment made by the owner)		2600	2600
Jan 10	Cash A/C Dr Service Revenue A/C Cr (Received cash for service performed)		5000	2300 2700
Jan 30	Equipment A/C Dr Cash A/C Cr Notes Payable A/C Cr (Purchased equipment for cash and notes payable)		1700	1700
	A/C Receivable A/C Dr Service Revenue A/C Cr (Billed clients for services performed)			

Requirements:

1. Prepare necessary ledger accounts in the books of Mushfiq Auditing Service'
 2. Prepare a trial balance and check the mathematical accuracy of the accounts
2. Syed Arafat, ACA started his own accounting firm on 1 January, 2019. The following transactions took place during the month of January, 2019
- January 1 Arafat invested Taka 70000 cash, in his business
 January 2 Purchased equipment of Taka 100,000 on account.
 January 3 Purchased Taka 6000 supplies for cash
 January 4 Performed services worth Taka 100,000, received Taka 50000 cash and the rest on account
 January 5 Incurred Taka 7000 advertising cost in Daily Star newspaper on account
 January 10 Hired an office manager on agreement of Taka 25000 salary per month
 January 15 Withdrew Taka 10,000 cash
 January 30 Received the amount due on January 4

January 31 Paid salaries to the office manager.

Requirements:

- a) Prepare necessary journal entries in the books of Arafat Accounting Service 9
 b) Prepare necessary ledger accounts [T Accounts] 10
 c) Prepare a trial balance on 31 January and show the arithmetic accuracy of the accounts. 6
3. a) You are given the following information about Abdur Rahim Enterprise at the end of his first full month of trading, 30 April, 2019

Capital at 1 April, 2019	Tk. 25000
Additional capital introduced	2500
Profit for the month	36200
Furniture at cost	18000
Equipment at cost	7000
Drawings in the month	9600
loan	500
inventories	12500
Cash in hand	60950
Cash at bank	14750
Trade payables	67500
Trade receivables	8900

Requirement: Prepare a balance sheet for Abdur Rahim Enterprise as on 30 April, 2019

- b) What is accounting cycle? Briefly explain the accounting cycle. 15
 10
4. Following is the trial balance of Abdur Rahman's Delivery service on July 31, 2018

Account title	Debit	Credit
Accounts Receivable	7642	
Accounts Payable		8396
Cash	12481	
Equipment	49360	
Gasoline Expense	758	
Utilities Expense	523	
Notes Payable		17000
Prepaid Insurance	1968	
Repair and Maintenance Expense	961	
Service Revenue		10610
Owner's Drawings	700	
Owner's Capital		42000
Salaries and Wages Expense	4428	
Salaries and Wages Payable		815
Total	78821	78821

Requirements:

- a) Prepare an income statement for the year ended July 31, 2018 10
 b) Prepare an owner's equity statement for the year ended July 31, 2018 5
 c) Prepare a balance sheet as on July 31, 2018 10

Program: M.Sc.TE, 1st Semester

Date: 24 May 2019, Friday

ISLAMIC UNIVERSITY OF TECHNOLOGY (IUT)
ORGANISATION OF ISLAMIC COOPERATION (OIC)
DEPARTMENT OF TECHNICAL AND VOCATIONAL EDUCATION (TVE)

Semester Final Examination**Course No:** TVE 6113**Course Title:** Curriculum Development in TVE**Winter Semester** (2018-2019)**Time:** 3 hours.**Full Marks:** 150

There are 8 (eight) questions. Answer any 6 (six).

Figures in the right margin indicate marks of the question.

1. (a) Define the term "Curriculum" according to the following authors: i) D'Hainaut (1981), ii) Wilson (1990), and iii) Finch & Crunkilton (1999). 15
 (b) How does a curriculum differ from a syllabus? 5
 (c) Sketch possible shared and unique aspects of curriculum development and instructional development. 5
2. (a) Atherton (2009) sets up a model, which works along two dimensions, and distinguishes four types of curricula: what are these types of curricula? How do they differ among them? 15
 (b) Draw the relationship among various major elements of an educational system/vocational program system and explain each of the elements. 10
3. (a) What are the primary data sources you should consider when making curricular decision? 5
 (b) Describe any two of the following curriculum design approaches:
 i. Individual Needs Approach, ii. Subject Specialization Approach, iii. Social Demand/ Job Analysis Approach. 20
4. (a) Vogler created a Curriculum Pedagogy Assessment (CPA) Model of curriculum design. State the eight basic concepts on which this model is built. 10
 (b) Explain the Integrated System for Workforce Education Curricula with diagram. 15
5. (a) Identification of possible source of employment within a community is critical to the development of TVET curricula. Discuss briefly the different approaches to identify the sources of employment, including current sources and emerging areas of employment. 15
 (b) Describe how can you project labour supply and demand. 10
6. (a) Explain different factors associated with determining curriculum content. 15
 (b) Describe how can you select a strategy for determining curriculum content. 10
7. Various strategies/ approaches are available to determine curriculum content. Describe the DACUM Approach. How does it differ from the 'All Aspects' of Industry Approach? 25
8. (a) Quality curriculum materials are essential for implementing curricula. State the definition of curriculum materials. Give at least five examples from each of three different categories of curriculum materials. 15
 (b) Explain different factors that must be considered while selecting curriculum materials. 10

ISLAMIC UNIVERSITY OF TECHNOLOGY (IUT)
ORGANISATION OF ISLAMIC COOPERATION (OIC)
DEPARTMENT OF TECHNICAL AND VOCATIONAL EDUCATION (TVE)

Semester Final Examination
Course No: TVE 6153
Course Title: Educational Research

Summer Semester (2018-2019)
Time : 3 hours
Full Marks : 150

There are 8 (eight) questions. Answer any 6 (six). All questions carry equal marks.
Figures in the right margin indicate marks of the questions.

1. a) Distinguish between *Positivist view* and *Interpretivist view* in technical educational research by using proper examples. Show how they are linked with qualitative and quantitative research. 14
- b) What are the underlying reasons of conducting research in the area of Technical and Vocational Education (TVE)? Discuss reasons with appropriate examples. 11
2. a) What is applied research? Discuss the main features of evaluation research in technical education. 10
- b) Clarify independent and dependent variable in research with examples. 10
- c) Write a research problem and show its independent and dependent variables. 05
3. a) One MScTE student selected a research problem: '**IUT Students' performance of online activities** in a large first year BSc. Class' while he/she was conducting his/her thesis work. He/She was excited to find out the solution of that problem. The supervisor however, suggested that there might be few challenges that he/she needs to consider before finalizing this problem. 08
Based on this background, what were the possible challenges that the student could encounter while he/she intended to investigate the stated problem? Give satisfactory evidence to support your answer.
- b) Briefly discuss *experimental research* with an example. 08
- c) Provide five names of Qualitative research. Discuss one of them briefly with example. 09
4. a) Discuss about Sampling Error and Sampling Bias. 08
- b) A researcher claimed in his report that the Sampling Error was zero, do you think his claimed was true (possible)? Clarify your answer. 05
- c) In which particular context do you think, stratified sampling would be one of the best means for selecting sample? 05
- d) Identify major steps in using stratified sampling in your research. 07
5. a) Find out the *mean*, *median* and *mode* of the following data sets: 10
(i) 98, 12, 57, 60, 58, 98, 62, 40, 58, 48.

(ii) 71, 11, 31, 51, 61, 91, 41, 81, 21.

- b) An MScTE research student is conducting a research for identifying reduction of poverty via skill acquisition in TVET sectors. In the analysis stage, the researcher got the following data. Calculate the W (Weighted average) or X (Mean) for the following statements. (Mean and weighted average are same here) 15

No	ITEMS	N	SA	A	N	DA	SDA	X
1	Country has provision to attract poor people towards skilled training	208	26	113	23	39	7	
2	The government provides free skills for students from poor families	207	23	38	19	77	50	
3	The government and private sectors have created a number of job provisions	208	59	80	11	42	16	

6. a) Identify quantitative and qualitative data collection tools from the following lists 04
Interviews, Surveys, Focus groups, Observation (unstructured),
Questionnaire, Tests, Existing databases, Case Study.
- b) Discuss major steps involved in conducting an effective interview. 08
- c) Write three negatives (disadvantages) of using questionnaire in education research 03
- d) What are the aspects (reasons/characteristics) do you need to consider before choosing a specific data collection technique? Discuss these aspects 10
7. a) Write a *research title* of your choice in the area of technical education. 03
- b) Why do you think your selected problem is urgent to investigate? 06
- c) List the appropriate objective and specific objectives of your research problem. 06
- d) Design the following methodological aspects to continue your research: 10
- Selection of your research paradigm (qualitative or quantitative) and explain the reasons of selecting such.
 - Which data collection tool will you be selected and why do you think your selection is appropriate to investigate your research?
8. a) Clarify (with four points) the importance of conducting literature review for identifying the location of your research problem in the existing knowledge. 08
- b) In which cases, Likert Scales could be used in educational research? 07
- c) Discuss the characteristics of a good thesis report. 10

Programme: MScTE (3rd Semester)

Date: 16 May 2019 Thursday (Group B)

ISLAMIC UNIVERSITY OF TECHNOLOGY (IUT)
ORGANISATION OF ISLAMIC COOPERATION (OIC)

DEPARTMENT OF TECHNICAL AND VOCATIONAL EDUCATION (TVE)

Semester Final Examination

Winter Semester (2018-2019)

Course No: TVE 6355

Time: 3: 00 hours

Course Title: Quantitative Research and Advanced Statistics

Full Marks: 150

There are 8 (eight) questions. Answer any 6 (Six).

Figures in the right margin indicate marks of the questions.

1. a) What is survey design? How survey differs to experimental and correlational designs? When do researcher use survey research? (10)
- b) Define longitudinal survey design. Discuss different types of longitudinal survey design with examples. (15)
2. a) Maria is doing a research to examine an important issue- *school violence and weapons at school*. She prepares a survey instrument to collect the data from the students. As she is new to research, some survey items are poorly written. Following are the examples of some poorly written survey items. Identify the problems with each of the item. Correct the problems and write the improved version of each of the survey item. (8)
 - (i) Do you support gun control?
---Yes ---No ---Don't know
 - (ii) Do you believe that guns and knives do not belong in schools?
---Yes ---No ---Don't know
 - (iii) Should students pack a .45 at school?
---Yes ---No ---Don't know
 - (iv) How many times have you seen a student carry a handgun?
---0 times ---1-2 times ---2-3 times ---More than 3 times
 - (v) To what extent do you feel that handguns are a problem at your school?
---A great extent ---Some ---Not very important ---Not a problem
 - (vi) To what extent do you feel that handguns are a problem at your school?
---Very important ---Important ---Little importance
 - (vii) How often have you seen students carry semi-automatic weapons at school?
---None ---1 time ---2 times ---3 or more times
 - (viii) How many students have you seen carrying guns at school?
---1 student ---2 students ---3 students ---More than 3 students
- b) A student at IUT wants to survey students regarding their debit card use. He decides to conduct the survey at the IUT cafeteria during lunch hour by interviewing every fifth person leaving the cafeteria. What type of survey design would you recommend he use? Give reasons. What type of sampling technique is being used? Can you identify a better way of sampling the student body? (17)

3. a) What is variable? Consider a fender bender car accident you are involved with. You hit another car at a stop sign-rammed right into the back of it. During driving you were talking on your cell phone. The pavement was clear, the skies were sunny, and it had not rained for days. Considering this accidental situation, identify the dependent, independent, control and confounding variable. (10)
- b) Suppose a researcher wants to examine the relationship between the type of after-school program attended by a child and the child's intelligence level. The researcher is interested in whether students who attend after-school programs that are academically oriented (math, writing, computer use) score higher on an intelligence test than students who do not attend such programs. Researcher wants to do both one-tailed and two-tailed hypothesis test. State the one-tailed and two-tailed hypothesis (including null hypothesis) and write down their equation respectively. (15)
4. a) Mention five key properties of a normal curve. (5)
- b) There is a group of 200 students that has to be classified into five categories A, B, C, D and E according to their ability. Each of the categories being equal under normal distribution, tell how many students should be placed in each category A, B, C, D and E. (20)
5. a) Two students were informed that they received z-scores of **0.8** and **-0.4**, respectively, on a multiple-choice examination in physics. If their scores were 88 and 64 respectively, find the mean (M) and standard deviation (σ) of the examination scores in physics. (12)
- b) If a distribution is normal with $M=100$ and $SD=15$, find out the two points between which the middle 60 percent of the cases lie. (13)
6. a) Ten students receive the following scores- 86, 86, 87, 88, 90, 90, 92, 93, 94 and 94. If the teacher for this course wished to give the grades so that students
- (i) Two standard deviations or more below the mean received an **F**
 - (ii) Between one and two standard deviations below the mean received a **D**
 - (iii) Within one standard deviation above or below the mean received a **C**
 - (iv) Between one and two standard deviations above the mean received a **B**
 - (v) Two standard deviations or more above the mean received an **A**
- How many would receive the grade A, B, C, D and F? (10)
- b) Justify the following statements for a normal curve, whether they are True or False- (15)
- (i) The area between $z = 0$ and $z = 1$ equals the area between $z = 0$ and $z = -1$
 - (ii) The area between $z = 0$ and $z = 1$ equals the area between $z = 1$ and $z = 2$
 - (iii) The percentile rank of $z = 1$ equals the percentile rank of $z = -1$
7. a) Define degrees of freedom, standard error and confidence interval. (5)
- b) In a test, there were 16 independent observations of a certain magnitude with a mean of 100 and SD of 24. Find out (at both 0.05 and 0.01 levels of confidence) the limits of the confidence interval for the population (or true) mean. (10)
- c) It is generally known that the habit of reading newspapers and magazines is helpful in bringing about an increase in language vocabulary. A language teacher divides his class into two groups- *experimental* and *control*. Under the assumption that newspaper reading will increase the vocabulary, the experimental group was given two hours daily to read English newspapers and magazines, while no such facility was provided to the control group. After six months, both the groups were given a vocabulary test. The scores obtained are detailed below. (10)

Experimental group:	115	112	109	112	137				
Control Group:	110	112	95	105	111	97	112	102	

Interpret the data and say whether the gain in vocabulary is significant.

8. a) Out of 100 students who enter a class room, 60 students turn to the right and 40 to the left. Test the hypothesis that the students turn right or left randomly. (10)
- b) In a study of color preference, 48 girls were asked to select the color they liked best out of the three basic colors- red, blue and green. The data collected is as follows: (15)

Red	Blue	Green
24	12	12

Test the hypothesis that the observed choices do not differ from a random selection.

Formulae: TVE 6355

[The Parameters in the formulae have their usual meanings]

Central Tendency

$$M = \frac{\sum fX}{N}; M = A + \frac{\sum fx}{N} \times i; M_d = \left(\frac{N+1}{2}\right)th; M_d = L + \left[\frac{(N/2)-F}{f}\right] \times i; M_d = \left[\frac{\text{value of } (N/2)th + \text{value of } (N/2+1)th}{2}\right]$$

$$M_o = L + \frac{f_1}{f_1+f_{-1}} \times i; M_o = 3M_d - 2M; SD = \sqrt{\frac{\sum X^2}{N}}; SD = \sqrt{\frac{\sum fX^2}{N}}$$

Percentiles

$$PR = 100 - \frac{100R-50}{N}; PR = \frac{100}{N} \left[F + \left(\frac{X-L}{i}\right) \times f \right]$$

Difference between means (using normal curve, z and t value)

$$z = \frac{X-M}{\sigma}; t = \frac{M_1-M_2}{\sigma_D}$$

Standard Error / Standard deviation

$$\sigma_D = \sqrt{\frac{\sigma_1^2}{N_1} + \frac{\sigma_2^2}{N_2}}; \text{ Pooled SD, } \sigma = \sqrt{\frac{\sum x_1^2 + \sum x_2^2}{(N_1-1) + (N_2-1)}}; SE_d = \sqrt{\sigma_{M_1}^2 + \sigma_{M_2}^2 - 2r\sigma_{M_1}\sigma_{M_2}}; SE_d =$$

$$\sqrt{(\sigma_{M_1}^2 + \sigma_{M_2}^2)(1-r^2)}$$

$$\sigma_D = \sigma \sqrt{\frac{1}{N_1} + \frac{1}{N_2}}$$

$$a = \sqrt{\frac{\sum x^2}{N}} \quad x = X - M$$

Chi-square test

$$\chi^2 = \sum \left[\frac{(f_o - f_e)^2}{f_e} \right]; \chi^2 = \frac{N(AD-BC)^2}{(A+B)(C+D)(A+C)(B+D)}; C = \sqrt{\frac{\chi^2}{N+\chi^2}}; \chi^2 = \sum \left[\frac{(|f_o - f_e| - 0.5)^2}{f_e} \right]; \chi^2 = \frac{N(|AD-BC| - \frac{N}{2})^2}{(A+B)(C+D)(A+C)(B+D)}$$

ANOVA

$$C = \frac{(\sum X)^2}{N}; S_t^2 = \sum X^2 - C; S_b^2 = \frac{(\sum X_1)^2}{n_1} + \frac{(\sum X_2)^2}{n_2} + \frac{(\sum X_3)^2}{n_3} \dots + \frac{(\sum X_n)^2}{n_n} - C; S_w^2 = S_t^2 - S_b^2$$

$$F = \frac{\text{Mean square variance between the groups}}{\text{Mean square variance within the groups}}$$

**Area between the Mean and Successive Standard Deviation
Units under the Normal Curve**

$z\left(\frac{x}{\sigma}\right)$.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
0.0	0.0000	0.0040	0.0080	0.0120	0.0160	0.0199	0.0239	0.0279	0.0319	0.0359
0.1	0.0398	0.0438	0.0478	0.0517	0.0557	0.0596	0.0636	0.0675	0.0714	0.0754
0.2	0.0793	0.0832	0.0871	0.0910	0.0948	0.0987	0.1026	0.1064	0.1103	0.1141
0.3	0.1179	0.1217	0.1255	0.1293	0.1331	0.1368	0.1406	0.1443	0.1480	0.1517
0.4	0.1554	0.1591	0.1628	0.1664	0.1700	0.1736	0.1772	0.1808	0.1844	0.1879
0.5	0.1915	0.1950	0.1985	0.2019	0.2054	0.2088	0.2123	0.2157	0.2190	0.2224
0.6	0.2258	0.2291	0.2324	0.2357	0.2389	0.2422	0.2454	0.2486	0.2518	0.2549
0.7	0.2580	0.2612	0.2642	0.2673	0.2704	0.2734	0.2764	0.2794	0.2823	0.2852
0.8	0.2881	0.2910	0.2939	0.2967	0.2996	0.3023	0.3051	0.3078	0.3106	0.3133
0.9	0.3159	0.3186	0.3212	0.3238	0.3264	0.3289	0.3315	0.3340	0.3365	0.3389
1.0	0.3413	0.3438	0.3461	0.3485	0.3508	0.3531	0.3554	0.3577	0.3599	0.3621
1.1	0.3643	0.3665	0.3686	0.3708	0.3729	0.3749	0.3770	0.3790	0.3810	0.3830
1.2	0.3849	0.3869	0.3888	0.3907	0.3925	0.3944	0.3962	0.3980	0.3997	0.4015
1.3	0.4032	0.4049	0.4066	0.4082	0.4099	0.4115	0.4131	0.4147	0.4162	0.4177
1.4	0.4192	0.4207	0.4222	0.4236	0.4251	0.4265	0.4279	0.4292	0.4306	0.4319
1.5	0.4332	0.4345	0.4357	0.4370	0.4383	0.4394	0.4406	0.4418	0.4429	0.4441
1.6	0.4452	0.4463	0.4474	0.4484	0.4495	0.4505	0.4515	0.4525	0.4535	0.4545
1.7	0.4554	0.4564	0.4573	0.4582	0.4591	0.4599	0.4608	0.4616	0.4625	0.4633
1.8	0.4641	0.4649	0.4656	0.4664	0.4671	0.4678	0.4686	0.4693	0.4699	0.4706
1.9	0.4713	0.4719	0.4726	0.4732	0.4738	0.4744	0.4750	0.4756	0.4761	0.4767
2.0	0.4772	0.4778	0.4783	0.4788	0.4793	0.4798	0.4803	0.4808	0.4812	0.4817
2.1	0.4821	0.4826	0.4830	0.4834	0.4838	0.4842	0.4846	0.4850	0.4854	0.4857
2.2	0.4861	0.4864	0.4868	0.4871	0.4875	0.4878	0.4881	0.4884	0.4887	0.4890
2.3	0.4893	0.4896	0.4898	0.4901	0.4904	0.4906	0.4909	0.4911	0.4913	0.4916
2.4	0.4918	0.4920	0.4922	0.4925	0.4927	0.4929	0.4931	0.4932	0.4934	0.4936
2.5	0.4938	0.4940	0.4941	0.4943	0.4945	0.4946	0.4948	0.4949	0.4951	0.4952
2.6	0.4953	0.4955	0.4956	0.4957	0.4959	0.4960	0.4961	0.4962	0.4963	0.4964
2.7	0.4965	0.4966	0.4967	0.4968	0.4969	0.4970	0.4971	0.4972	0.4973	0.4974
2.8	0.4974	0.4975	0.4976	0.4977	0.4977	0.4978	0.4979	0.4979	0.4980	0.4981
2.9	0.4981	0.4982	0.4982	0.4983	0.4984	0.4984	0.4985	0.4985	0.4986	0.4986
3.0	.4987									

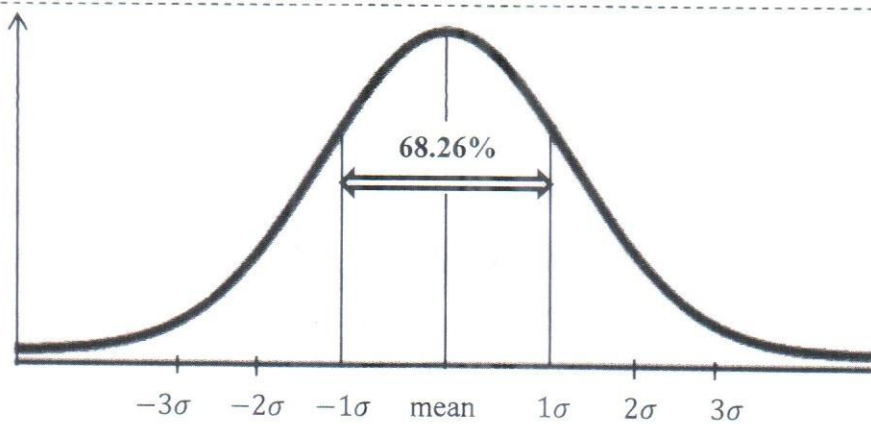
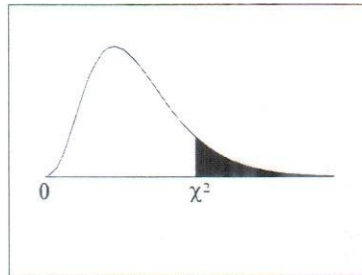


Figure: Area under Normal Curve

t Distribution: Critical Values of t

Degrees of freedom	One-tailed test:	Significance level					
		5%	2.5%	1%	0.5%	0.1%	0.05%
1		6.314	12.706	31.821	63.657	318.309	636.619
2		2.920	4.303	6.965	9.925	22.327	31.599
3		2.353	3.182	4.541	5.841	10.215	12.924
4		2.132	2.776	3.747	4.604	7.173	8.610
5		2.015	2.571	3.365	4.032	5.893	6.869
6		1.943	2.447	3.143	3.707	5.208	5.959
7		1.894	2.365	2.998	3.499	4.785	5.408
8		1.860	2.306	2.896	3.355	4.501	5.041
9		1.833	2.262	2.821	3.250	4.297	4.781
10		1.812	2.228	2.764	3.169	4.144	4.587
11		1.796	2.201	2.718	3.106	4.025	4.437
12		1.782	2.179	2.681	3.055	3.930	4.318
13		1.771	2.160	2.650	3.012	3.852	4.221
14		1.761	2.145	2.624	2.977	3.787	4.140
15		1.753	2.131	2.602	2.947	3.733	4.073
16		1.746	2.120	2.583	2.921	3.686	4.015
17		1.740	2.110	2.567	2.898	3.646	3.965
18		1.734	2.101	2.552	2.878	3.610	3.922
19		1.729	2.093	2.539	2.861	3.579	3.883
20		1.725	2.086	2.528	2.845	3.552	3.850
21		1.721	2.080	2.518	2.831	3.527	3.819
22		1.717	2.074	2.508	2.819	3.505	3.792
23		1.714	2.069	2.500	2.807	3.485	3.768
24		1.711	2.064	2.492	2.797	3.467	3.745
25		1.708	2.060	2.485	2.787	3.450	3.725
26		1.706	2.056	2.479	2.779	3.435	3.707
27		1.703	2.052	2.473	2.771	3.421	3.690
28		1.701	2.048	2.467	2.763	3.408	3.674
29		1.699	2.045	2.462	2.756	3.396	3.659
30		1.697	2.042	2.457	2.750	3.385	3.646
32		1.694	2.037	2.449	2.738	3.365	3.622
34		1.691	2.032	2.441	2.728	3.348	3.601
36		1.688	2.028	2.434	2.719	3.333	3.582
38		1.686	2.024	2.429	2.712	3.319	3.566
40		1.684	2.021	2.423	2.704	3.307	3.551
42		1.682	2.018	2.418	2.698	3.296	3.538
44		1.680	2.015	2.414	2.692	3.286	3.526
46		1.679	2.013	2.410	2.687	3.277	3.515
48		1.677	2.011	2.407	2.682	3.269	3.505
50		1.676	2.009	2.403	2.678	3.261	3.496
60		1.671	2.000	2.390	2.660	3.232	3.460
70		1.667	1.994	2.381	2.648	3.211	3.435
80		1.664	1.990	2.374	2.639	3.195	3.416
90		1.662	1.987	2.368	2.632	3.183	3.402
100		1.660	1.984	2.364	2.626	3.174	3.390
120		1.658	1.980	2.358	2.617	3.160	3.373
150		1.655	1.976	2.351	2.609	3.145	3.357
200		1.653	1.972	2.345	2.601	3.131	3.340
300		1.650	1.968	2.339	2.592	3.118	3.323
400		1.649	1.966	2.336	2.588	3.111	3.315
500		1.648	1.965	2.334	2.586	3.107	3.310
600		1.647	1.964	2.333	2.584	3.104	3.307
∞		1.645	1.960	2.326	2.576	3.090	3.291

Chi-Square Distribution Table



df	.99	.95	.90	.10	.05	.01	.005
1	0.000	0.004	0.016	2.706	3.841	6.635	7.879
2	0.020	0.103	0.211	4.605	5.991	9.210	10.597
3	0.115	0.352	0.584	6.251	7.815	11.345	12.838
4	0.297	0.711	1.064	7.779	9.488	13.277	14.860
5	0.554	1.145	1.610	9.236	11.070	15.086	16.750
6	0.872	1.635	2.204	10.645	12.592	16.812	18.548
7	1.239	2.167	2.833	12.017	14.067	18.475	20.278
8	1.646	2.733	3.490	13.362	15.507	20.090	21.955
9	2.088	3.325	4.168	14.684	16.919	21.666	23.589
10	2.558	3.940	4.865	15.987	18.307	23.209	25.188
11	3.053	4.575	5.578	17.275	19.675	24.725	26.757
12	3.571	5.226	6.304	18.549	21.026	26.217	28.300
13	4.107	5.892	7.042	19.812	22.362	27.688	29.819
14	4.660	6.571	7.790	21.064	23.685	29.141	31.319
15	5.229	7.261	8.547	22.307	24.996	30.578	32.801
16	5.812	7.962	9.312	23.542	26.296	32.000	34.267
17	6.408	8.672	10.085	24.769	27.587	33.409	35.718
18	7.015	9.390	10.865	25.989	28.869	34.805	37.156
19	7.633	10.117	11.651	27.204	30.144	36.191	38.582
20	8.260	10.851	12.443	28.412	31.410	37.566	39.997
21	8.897	11.591	13.240	29.615	32.671	38.932	41.401
22	9.542	12.338	14.041	30.813	33.924	40.289	42.796
23	10.196	13.091	14.848	32.007	35.172	41.638	44.181
24	10.856	13.848	15.659	33.196	36.415	42.980	45.559
25	11.524	14.611	16.473	34.382	37.652	44.314	46.928
26	12.198	15.379	17.292	35.563	38.885	45.642	48.290
27	12.879	16.151	18.114	36.741	40.113	46.963	49.645
28	13.565	16.928	18.939	37.916	41.337	48.278	50.993
29	14.256	17.708	19.768	39.087	42.557	49.588	52.336
30	14.953	18.493	20.599	40.256	43.773	50.892	53.672
40	22.164	26.509	29.051	51.805	55.758	63.691	66.766
50	29.707	34.764	37.689	63.167	67.505	76.154	79.490
60	37.485	43.188	46.459	74.397	79.082	88.379	91.952
70	45.442	51.739	55.329	85.527	90.531	100.425	104.215
80	53.540	60.391	64.278	96.578	101.879	112.329	116.321
90	61.754	69.126	73.291	107.565	113.145	124.116	128.299
100	70.065	77.929	82.358	118.498	124.342	135.807	140.169