
DATA ON THE VALUE OF ISLAMIC RELIGIOUS KNOWLEDGE AND SYSTEM OF MATHEMATICAL MODELING EQUATIONS INCREASING THE VALUE OF ISLAMIC RELIGIOUS KNOWLEDGE

Barirohmah^{1, a}

¹Doktoral Student of Department of Islamic Education, Universitas Islam Negeri Sunan Kalijaga, Yogyakarta, Indonesia.

^aVocational High School of Nurul Iman, Bantul, Indonesia.

Correspondence: Barirohmah, Email: barisukauin@gmail.com

Abstract

The understanding of Islamic Religion of students in the Engineering Mathematics Course, Department of Mathematics, Universitas Islam Negeri Sunan Kalijaga Yogyakarta is quite good, with an average value = 86.4444, median = 84, and mode = 100. The mathematical modeling equation system for increasing understanding of Islamic religion consists of four ordinary differential equations.

Keywords: Engineering Mathematics Subject Students, Understanding of Islamic Religion, Average Grade, Mathematical Modeling Equation System Understanding of Islamic Religion.

1. INTRODUCTION

Islamic Religious Education is an integral part of the education system in many countries with a majority Muslim population, such as Indonesia. Islamic Religious Education aims to provide students with a comprehensive understanding of Islamic teachings, both in religious, moral and social contexts. This subject covers various aspects, starting from the basic teachings of Islam, the history of its development, worship practices, moral values, to culture and customs rooted in Islam.

The aim of Islamic Religious Education is to form good character, create moral awareness, develop a deep understanding of Islamic teachings, and strengthen students' Islamic identity. Apart from that, Islamic Religious Education also plays a role in forming an attitude of tolerance, mutual respect between religious believers, and fostering an attitude of social concern.

With developments over time, the approach to teaching Islamic Religious Education has also changed. Today, religious education tends to integrate technology and modern learning methods to ensure that religious messages are delivered in a way that is relevant and attractive to the younger generation.

Engineering Mathematics is an elective course in the Department of Mathematics, Faculty of Science and Technology, Sunan Kalijaga State Islamic University, Yogyakarta, Indonesia. The lecturer in Engineering Mathematics is Dr. Sugiyanto, S.Si., S.T., M.Si. The Engineering Mathematics course studies (1) heat transfer; (2) wave equation, (3) dynamics; (4) kinematics.

Mathematical modeling is an important process in mathematics that involves the use of mathematical concepts to create a model or mathematical representation of a phenomenon in the real world. This process begins with identification of the problem to be modeled, followed by a deep understanding of the relevant mathematical concepts. Next, a mathematical model is formed by describing the relationship between the variables involved in the problem. The model is then verified and validated to ensure its accuracy, and analyzed to understand its behavior and properties. The results of mathematical models are used to make decisions or infer useful information in the context of the problem being modeled. Thus, mathematical modeling

provides a powerful tool for understanding and solving various problems in various fields of science.

2. QUESTIONS AND ANSWER KEY

Questions and answer keys for school exams in Islamic Religion subjects. In this article there are 25 multiple choice questions.

2.1. Regarding Islamic Religious Education

1. What is meant by Qibla ...
 - a. Symbol
 - b. The purpose or direction of worship
 - c. Worship
 - d. Sign
 - e. Natural

2. One of the goals of da'wah is ...
 - a. Make improvements to the Islamic community
 - b. Destroyer of people's faith
 - c. Formation of contemporary Islamic communities
 - d. Benefit from it
 - e. Have lots of friends

3. Creatures of Allah who always deny Allah SWT are ...
 - a. Devil
 - b. Man
 - c. Jin
 - d. Angel
 - e. Animal

4. A Prophet and Rasullulah who could not provide guidance to his uncle named ...
 - a. Abi Talib
 - b. Ali ibn Abi Talib
 - c. Abdul Muttalib
 - d. Abu Sufyan
 - e. Kadija

5. All apostles sent by Allah SWT, had the same lesson, namely ...
 - a. Sharia
 - b. Court
 - c. Worship
 - d. Monotheism
 - e. Morality

6. From several books of Allah SWT. Having similarities and essence/essence, namely ...
 - a. Declare Islam as a universal religion
 - b. Become a guide for human life
 - c. Explain the story of the Prophet
 - d. Contains commands and prohibitions
 - e. Teaching about monotheism

7. The first order in distributing infaq is ...

- a. Poor
 - b. Infidel
 - c. Traveler
 - d. Knowledge seeker
 - e. Poor and destitute people
8. The priest prays for the corpse when a man's body is then in the ... corpse.
- a. Waist
 - b. Thigh
 - c. Head
 - d. Foot
 - e. Stomach
9. Da'wah in language means ...
- a. Supply
 - b. Infighting
 - c. In war
 - d. Shout
 - e. Exciting
10. Allah will elevate the status of people who always ...
- a. Fight in the way of Allah SWT
 - b. Fighting against inequality
 - c. Amar is makruf nahi ungkar
 - d. Have faith and knowledge
 - e. Jihad Fisabilillah
11. Remembering the difficult tasks of the apostles, the apostles not only received revelations, but also ...
- a. Know a lot
 - b. Inspired
 - c. Mediation
 - d. A miracle
 - e. Karamah
12. Prophet Musa (a.s.) received revelation through direct dialogue with Almighty God and it happened in ...
- a. Hira Cave
 - b. Jabal Nur
 - c. Jabal Uhud
 - d. Jabal Rahmah
 - e. Thursina Hill
13. A rich apostle, even a king, obedient to Allah SWT is ...
- a. Adam as
 - b. Ibrahim AS
 - c. Sulaiman as
 - d. Musa (a.s.)
 - e. Muhammad, PBUH

14. The apostle is saved from mistakes and sins, and from anything that reduces his dignity, because the apostle ...

- a. Trusted
- b. Perfect
- c. Fatana
- d. Tablighi
- e. Siddiq

15. One of the obligatory characteristics of an apostle whose meaning is trustworthy is ...

- a. Siddiq
- b. Trusted
- c. Perfect
- d. Fatana
- e. Tablighi

16. A prophet whom Allah SWT gave the privilege of not being able to be burned or not being able to be consumed by fire is ...

- a. Ibrahim AS
- b. Jesus (peace be upon him)
- c. Ismail as
- d. Musa (a.s.)
- e. Harun as

17. Shafi'a ikhfa reads the law, namely ...

- a. Ada ba met breadfruit
- b. Tanwin meets Wau
- c. There are breadfruit mim meet ba
- d. There, Kasrah Tanwin met Ja
- e. There is a sign of Kasrah followed by breadfruit

18. Measure yourself by kindness, including actions ...

- a. Allowed
- b. Terrifying
- c. Instruct
- d. Worship
- e. Which is forbidden

19. Below is the attitude of working hard when at school ...

- a. Follow parental instructions
- b. Take part in extracurricular activities
- c. Like community service
- d. Help neighbors who have problems
- e. Active in village activities

20. Prophet Muhammad SAW is the final of the prophets, so he was given the title ...

- a. Anbiya ash
- b. End-time prophet
- c. Rings of the Prophets
- d. Khatamul anbiya
- e. Father of the prophets

21. Prophet Moses lived during the time of kings ...
- Iskandar Zulkarnain
 - Thalut
 - Namruz
 - Pharaoh
 - Abraha
22. People who are sick and approaching death were ordered by the Messenger of Allah. cursed, namely by reading ...
- Yasin's letter
 - Tahlil
 - Tahmid
 - Prayer beads
 - Basmalah
23. Below are the requirements for remains to be washed according to Islamic rules, except ...
- The corpse is in a state of faith
 - There are still some members, if only a few
 - Not martyrdom
 - Apostate from Islam
 - Died by accident
24. Giving good infaq is ...
- Lots
 - Truly
 - It's as simple as that
 - Liked or appreciated
 - Free
25. The best human being is someone who brings benefits to others, and that person is one of those who ...
- Happy
 - Lucky
 - Get forgiveness
 - Like
 - Peace of mind

2.2. Answers to Islamic Religious Education School Final Exam Questions

Answers to questions from subchapter 2.1 are presented in Table 1.

Table 1. Answers to questions

No	Answer	No	Answer
1	b. The purpose or direction of worship	14	b. Perfect
2	a. Make improvements to the Islamic community	15	b. Trusted
3	a. Devil	16	a. Ibrahim as
4	a. Abi Thalib	17	c. There are breadfruit mim meet ba
5	d. Monotheism	18	d. Worship
6	e. Teaching about monotheism	19	b. Take part in extracurricular activities

No	Answer	No	Answer
7	e. Poor and destitute people	20	d. Khatamul anbiya
8	c. Head	21	d. Pharaoh
9	e. Exciting	22	b. Tahlil
10	d. Have faith and knowledge	23	d. Apostate from Islam
11	d. A miracle	24	d. Liked or appreciated
12	e. Thursina Hill	25	b. Lucky
13	c. Sulaiman as		

2.3. Islamic Religious Knowledge Test Score Data

Figure 1 is a photo of the respondent. The list of values is in Table 2. The value obtained is correct x 4. The average value is 86.4444. The mode is 100. The median is 84.

Table 2. List of Values

No	NIM	Name	Correct	Wrong	Mark
1.	21106010003	Mayzihani	20	5	80
2.	21106010005	Erin Erika Ayu Syaputri	17	8	68
3.	21106010006	Dewi Rohmawati	25	0	100
4.	21106010010	Laila Izzahtul Mahya	21	4	84
5.	21106010011	Fadhilah Zahira	21	4	84
6.	21106010014	Ratna Sinta Dewi	25	0	100
7.	21106010018	M. Aly Akbar Hakim	20	5	80
8.	21106010019	Hamas Abdillah	21	4	84
9.	21106010020	Wida Yaska Andika Yusuf	21	4	84
10.	21106010026	Musyarofah Nurul Maisaroh	25	0	100
11.	21106010028	Vizena Fatmawati	25	0	100
12.	21106010042	Awliya Amali Tazkiya	25	0	100
13.	21106010043	Kharisma Muhammad Adzani	19	6	76
14.	21106010047	Ahlul Qulub	17	8	68
15.	21106010056	Fadia Sya'bi Irsyada	20	5	80
16.	21106010057	Logis Ake Arisa	23	2	92
17.	21106010061	Ridwan Muhammad Saputra	19	6	76
18.	21106010070	Atifah Rahmah	25	0	100



Figure 1. Photo of Respondents

3. SYSTEM OF MATHEMATICAL MODELING EQUATIONS TO INCREASE THE VALUE OF ISLAMIC RELIGIOUS KNOWLEDGE

The stages of mathematical modeling of increasing the value of Islamic religious knowledge are in Figure 1. There are three elements in increasing Islamic religion, namely: (1) Aqidah, (2) Sharia, (3) Morals.

Aqidah, in the Islamic context, refers to the basic beliefs that form the foundation of a Muslim's faith. Literally, aqidah means "bond" or "knot" and includes a strong belief in the six pillars of faith, namely belief in Allah, His angels, His books, His messengers, the Day of Judgment, and destiny, both the good and the bad. Aqidah functions as a spiritual and moral guide that directs a Muslim's actions and behavior, making it an important foundation for religious and social life. Understanding and practicing aqidah correctly is the essence of being a true Muslim, because aqidah determines how a person understands and interacts with the world around him and his relationship with the Creator.

Sharia, in the Islamic context, is a legal system and way of life that covers all aspects of a Muslim's life, both in the personal, social, economic and political realms. Derived from an Arabic word meaning "path to a water source," sharia includes laws taken from the Koran and Hadith, as well as ijma' (consensus) and qiyas (analogy). Sharia aims to achieve justice, prosperity, and order in society, while ensuring that the actions of Muslims are in accordance with Allah's will. By regulating all aspects of life, sharia functions as a detailed framework for Muslims to live meaningful and devout lives, as well as maintaining harmonious relationships between individuals and God, fellow humans, and the surrounding environment.

Morals in Islam refer to the ethics, morals and character that a Muslim should have in interacting with God, fellow humans and the environment. Morals are a manifestation of faith and the principles taught in the Qur'an and Hadith, which include qualities such as honesty, patience, humility, generosity, and justice. The purpose of morals is to create individuals who behave well, contribute positively to society, and gain Allah's approval. By having noble morals, a Muslim not only improves his relationship with the Creator, but also strengthens social ties and creates a harmonious and peaceful society. Morals are a reflection of a person's spirituality and concrete evidence of the practice of Islamic teachings in everyday life.

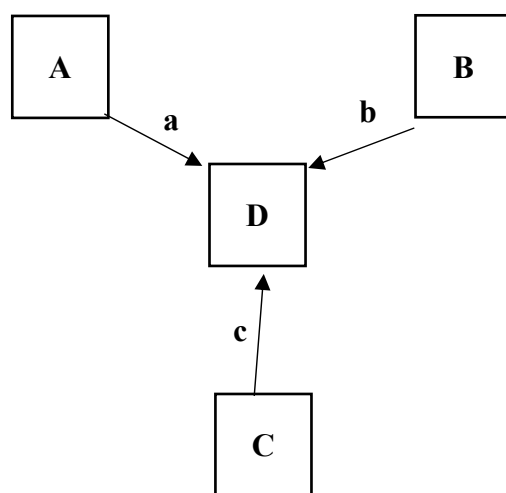


Figure 2. Modeling of the Basics of Increasing the Islamic Religion

Information in Figure 1

(1) Representations A, B, C, and D are aqidah, sharia, morals, and improvement of the Islamic religion, respectively.

(2) Representations a , b , and c respectively represent parameters that influence the improvement of aqidah, sharia, and morals.

The system of equations formed is

$$\begin{aligned}\frac{dA}{dt} &= -aA \\ \frac{dB}{dt} &= -bB \\ \frac{dC}{dt} &= -cC \\ \frac{dD}{dt} &= aA + bB + cC\end{aligned}$$

where t is a person's time.

4. CONCLUSION

There are 18 students in the Engineering Mathematics Course, Mathematics Department, Universitas Islam Negeri Sunan Kalijaga Yogyakarta, Yogyakarta. The lowest score for a student with a total of 25 questions is that the student's understanding is 68 and the highest is 100. The system formed by mathematical modeling to increase understanding of the Islamic religion is aqidah, sharia, morals.

5. ACKNOWLEDGEMENT

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