

MICAT 2011 Question Paper with Solutions

Time Allowed :3 Hours	Maximum Marks :100	Total questions :60
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General Instructions

General Instructions:

- i) All questions are compulsory. Marks allotted to each question are indicated in the margin.
- ii) Answers must be precise and to the point.
- iii) In numerical questions, all steps of calculation should be shown clearly.
- iv) Use of non-programmable scientific calculators is permitted.
- v) Wherever necessary, write balanced chemical equations with proper symbols and units.
- vi) Rough work should be done only in the space provided in the question paper.

SECTION A

1. The correct alternative associated with all of the given clues is:

Clues	Alternatives
(i) Temperate	(A) Warm
(ii) Cool	(B) Wave
(iii) Tepid	(C) Grassland
(iv) Sun	(D) Care
	(E) Moon

(A) Warm

(B) Wave

(C) Grassland

(D) Care

(E) Moon

2. The correct alternative associated with all of the given clues is:

Clues	Alternatives
(i) In	(A) Eye
(ii) Pin	(B) Kin
(iii) Lens	(C) Gate
(iv) Shoot	(D) Camera
	(E) Out

- (A) Eye
 - (B) Kin
 - (C) Gate
 - (D) Camera
 - (E) Out
-

3. The correct alternative associated with all of the given clues is:

Clues	Alternatives
(i) Stem	(A) Leaf
(ii) Boot	(B) Lid
(iii) Nose	(C) Trunk
(iv) Case	(D) Tiger
	(E) Shoe

- (A) Leaf
 - (B) Lid
 - (C) Trunk
 - (D) Tiger
 - (E) Shoe
-

4. The correct alternative associated with all of the given clues is:

Clues	Alternatives
(i) Wheat	(A) Rice
(ii) Flood	(B) Card
(iii) Lemon	(C) Field
(iv) Cash	(D) Hit
	(E) Cricket

- (A) Rice
- (B) Card
- (C) Field
- (D) Hit
- (E) Cricket

5. The correct alternative associated with all of the given clues is:

Clues	Alternatives
(i) Walk	(A) Win
(ii) Score	(B) Run
(iii) Muscle	(C) Finish
(iv) Sun	(D) Pain
	(E) Gases

- (A) Win
- (B) Run

- (C) Finish
 - (D) Pain
 - (E) Gases
-

6. Statement:

- 1. Some players are singers
- 2. All singers are tall

Conclusion:

- I. Some players are tall
- II. All players are tall

- (A) if only conclusion I follows
 - (B) if only conclusion II follows
 - (C) if either I or II follows
 - (D) if neither I nor II follows
 - (E) if both follow
-

7. Statement:

- 1. All chalk is not cheese
- 2. The moon is made of cheese

Conclusion:

- I. The moon is made of chalk
- II. The moon is not made of chalk

- (A) if only conclusion I follows
 - (B) if only conclusion II follows
 - (C) if either I or II follows
 - (D) if neither I nor II follows
 - (E) if both follow
-

8. Statement:

1. No engineer is a doctor
2. Some doctors are MBAs

Conclusion:

- I. Some doctors are not engineers
- II. Some MBAs are not engineers

- (A) if only conclusion I follows
(B) if only conclusion II follows
(C) if either I or II follows
(D) if neither I nor II follows
(E) if both follow
-

9. How are Harish and Sarita related?

Statements:

- I. Harish's grandfather married Sarita's maternal aunt.
- II. Harish and Sarita study in the same class.

- (A) If only statement I is required to answer the question
(B) If only statement II is required to answer the question
(C) If both I and II are required to answer the question
(D) If either I or II are required to answer the question
(E) If neither I nor II are required to answer the question
-

10. How many students are there in a class?

Statements:

- I. When arranged in alphabetical order, Dilip's name is the 15th and Vinod's is the 37th.
- II. In reverse order, Vinod's name is 3rd.

- (A) If only statement I is required to answer the question
(B) If only statement II is required to answer the question

- (C) If both I and II are required to answer the question
 - (D) If either I or II are required to answer the question
 - (E) If neither I nor II are required to answer the question
-

11. Which of the integers A, B, C, D, E are odd numbers?

Statements:

I. A, B, C, D, E are consecutive integers.

II. A and B are prime numbers.

- (A) If only statement I is required to answer the question
 - (B) If only statement II is required to answer the question
 - (C) If both I and II are required to answer the question
 - (D) If either I or II are required to answer the question
 - (E) If neither I nor II are required to answer the question
-

12. Identify the missing number and mark the answer in the OMR sheet.

2 5 7

4 7 5

3 6 ?

- (A) 2
 - (B) 3
 - (C) 4
 - (D) 5
 - (E) 6
-

13. Identify the missing number in the series:

15 9 5

23 8 13

31 9 ?

- (A) 13
 - (B) 15
 - (C) 19
 - (D) 23
 - (E) 25
-

14. Identify the missing number in the series:

3 7 16 35 ?

- (A) 44
 - (B) 55
 - (C) 64
 - (D) 74
 - (E) 84
-

SECTION - B

1. The names of both the country and capital begin with V. The capital has only four letters. What are the names of the country and capital?

- (A) Vanuatu; Vila
 - (B) Vanuatu; Vela
 - (C) Vila; Vatu
 - (D) Venda; Vila
 - (E) None of the above
-

2. COP15 is

- (A) 15th Copenhagen climate change December 2009
- (B) 15th Conference of Parties to the United Nations Framework Convention on Climate Change

- (C) 15th Meeting of the Parties to the Kyoto Protocol
 - (D) 15th Conference on Climate Change Global Risks, Challenges and Decisions held at Bella Centre, 2009
 - (E) 2009 United Nations Climate Change Conference
-

3. Erich Segal who died at the age of 72 in January 2010 is not the author of

- (A) Love Story
 - (B) Oliver Story
 - (C) Man, Woman and Child
 - (D) Only Love
 - (E) Love Letters
-

4. Adwords is launched by in year

- (A) a keyword targeted advertising program; Microsoft; 2000
 - (B) a keyword targeted advertising program; Netconvict; 2000
 - (C) a keyword targeted advertising program; Microsoft; 1999
 - (D) a keyword targeted advertising program; Google; 1999
-

5. Match the following companies and their taglines

- | | |
|------------------|--------------------------|
| 1. Yahoo! | 1. Inspired living |
| 2. Haier | 2. Inspire the Next |
| 3. Hitachi | 3. It's You |
| 4. Hughes | 4. Think skywards |
| 5. Jobsahead.com | 5. Fill in your ambition |

- (A) I-1; II-2; III-3; IV-4; V-5
- (B) I-3; II-2; III-1; IV-4; V-5

- (C) I-3; II-1; III-2; IV-4; V-5
(D) I-1; II-2; III-4; IV-4; V-3
(E) I-5; II-4; III-1; IV-2; V-3
-

SECTION - C

1. The revenue for Rajesh Fruit Shop varies from day to day. The shop's revenue on the first day of the year 2009 was Rs 1000/-, and on the second day it was Rs 6000/-. On the third day, the revenue decreased by Rs 4000/- as compared to the previous day's revenue. On the fourth day, the revenue increased by Rs 5000/- as compared to the previous day. If this trend continues, total revenue (in thousands) for Rajesh Fruit Shop for the year 2009 will be

- (A) 34384
(B) 910
(C) 34404
(D) 34399
-

Passage:

In a promotional campaign of Coke, 1000 tickets with numbers 1 to 1000 were distributed to all the customers who bought a 250ml bottle. And tickets numbered 1 to 500 were distributed among customers who bought a 1000ml bottle. At the end of the campaign, it was decided to award prizes to the consumers who had tickets with numbers divisible by 5 or 7.

2. The number of customers who bought 250ml bottle but were not awarded a prize is

- (A) 632
(B) 536
(C) 686
(D) 594
-

3. The number of the customers who bought 1000ml bottle and were awarded a prize is

- (A) 100
- (B) 157
- (C) 171
- (D) 71

4. Amit, Bipin and Chetan were running on a 180m circular track.

Chetan is running in a direction opposite to Amit and Bipin. All three start running from the same point at the same time. Average speed of Bipin is 4m per second, which is twice that of Amit, but half of Chetan. When three of them meet for the first time, the number of complete rounds made by Amit, Bipin and Chetan are

- (A) 2, 1, 4
- (B) 4, 2, 1
- (C) 1, 2, 4
- (D) Cannot be determined

Three popular news channels- NDTV, CNN IBN and Times Now telecast their News program - India at 9, India Decides at 9, and News Hour at 9pm respectively. As a part of a survey conducted among 1000 respondents (in each city) at Ahmedabad, Surat, Pune and Mumbai, the respondents were asked to tick those News programs that they watched at least once a week.

Number of the viewers for the programs is given in the table below.

Program	Ahmedabad	Surat	Pune	Mumbai
India at 9 (CNN IBN)	100	140	240	80
India Decides at 9 (NDTV)	60	120	300	200
News Hour (Times Now)	180	160	280	120

5. 5% of the viewers in Mumbai watch all three News programs, 8% of them watch India at 9 and India Decides at 9 and 6% watch both India Decides at 9 and News Hour. Probability that a respondent of Mumbai will watch only India Decides at 9 is

- (A) 0.164
 - (B) 0.094
 - (C) 0.220
 - (D) 0.2
-

6. Probability that a respondent of Ahmedabad will not watch any of these News programs is

- (A) 0.45
 - (B) 0.24
 - (C) 0.340
 - (D) 0.66
-

7. Probability that a respondent in Mumbai or Pune will not watch any of the 3 News programs is

- (A) 0.66
 - (B) 0.82
 - (C) 0.78
 - (D) Data is insufficient
-

Passage:

Considering two major sports events - IPL and Common Wealth Games, scheduled in the near future, a manufacturer of LCD TV projects a 10% increase in demand per week after 5 weeks. Currently he is producing 500 TV sets per week and is planning to increase his production by 5% per week for the first 4 weeks. After 4 weeks, he increases production by 8% compared to the previous week. Presently he is selling 600 TV sets per week at Rs. 30000/-. Considering growth in demand, he is planning to give a discount of Rs. 2000/- after 4 weeks.

8. Average production per week at the end of 8 weeks will be

- (A) 590.9
 - (B) 652.5
 - (C) 565.2
 - (D) 600.9
-

9. Total number of units of LCD to be sold at the end of 8 weeks will be

- (A) 5184.6
 - (B) 4816.6
 - (C) 6009.5
 - (D) 5080.2
-

10. How much more would the manufacturer have earned had he not given a discount of Rs. 2000?

- (A) 1036920
 - (B) 1597200
 - (C) 5056000
 - (D) 5569200
-

SECTION - D

Read the passage below and answer the questions that follow.

Mathematics is in many ways the most elaborate and sophisticated of the sciences or _____ so it seems to me, as a mathematician. So I find both a special pleasure and constraint in describing the progress of mathematics, because it has been part of so much human speculation; a ladder for mystical as well as rational thought in the intellectual ascent of man. However there are some concepts that any account of mathematics should include: the logical idea of proof, the empirical idea of exact laws of nature (of space particularly), the emergence of the concept of operations, and the movement in mathematics from a static to a dynamic description of nature. They form the theme of this essay.

Even very primitive peoples have a number system; they may not count much beyond four, but they know that two of anything plus two of the same thing makes four, not just sometimes but always. From that fundamental step, many cultures have built their own number systems, usually as a written language with similar conventions. The Babylonians, the Mayans, and the people of India, for example, invented essentially the same way of writing large numbers as a sequence of digits that we use, although they lived far apart in space and in time.

So there is no place and no moment in history where I could stand and say ‘Arithmetic begins here, now.’ People have been counting, as they have been talking, in every culture. Arithmetic, like language, begins in legend. But mathematics in our sense, reasoning with numbers is another matter. And it is to look for the origin of that, at the hinge of legend and history that I went sailing to the island of Samos.

1. Why does the writer of this passage think mathematics is one of the most sophisticated of sciences?

- (A) Because the writer is a mathematician
- (B) Because mathematics has been a part of much human speculation
- (C) Because it is an exact and logical subject
- (D) Because it has evolved as our understanding of nature has evolved

2. The following is implied in the passage:

- (A) Number systems and language are a matter of convention.
- (B) The progress of mathematics is a speculative issue.
- (C) Mathematicians consider mathematics as the most sophisticated of the sciences.
- (D) The island of Samos is where arithmetic began.

3. Select the option that captures the science of mathematics according to the passage:

- (A) a, b, d
- (B) a, c, d

- (C) a, b, c, d
 - (D) None of the above
-

4. Select the most appropriate title for the passage from the options below:

- (A) Mathematics in the Intellectual Evolution of Mankind
 - (B) Mathematics: A Quantitative Expression of Human Experience
 - (C) Mathematics: An Abstract of the Concrete
 - (D) Mathematics and Language: At the Hinge of Legend and History
-

5. Their views had been intellectually from the beginning

- (A) parallel
 - (B) opposed
 - (C) defined
 - (D) irreconcilable
-

6. The in attitudes toward eating meat developed at this time.

- (A) persistence
 - (B) transformation
 - (C) metamorphoses
 - (D) reconsideration
-

7. Kingship provided one model for bhakti, which from its very inception, superimposed the divine upon the royal.

- (A) The attitude towards the divine was influenced by royalty
- (B) The attitude towards the royalty was influenced by divinity
- (C) Gods and Kings were treated alike

(D) None of the above

8. By basing itself on the shifting sands of letters, diaries, memoirs, interviews all fatally subjective forms biography has no solid foundation in historical fact.

- (A) History is superior to Biography
 - (B) Biographies should be based on historical facts
 - (C) Biographies are fictional
 - (D) Biographies are subjective
-

9. The with which he faced the ups and downs that life presented him with was a source of wonder to his peers.

- (A) equanimity
 - (B) tranquility
 - (C) silence
 - (D) peace
-

10. We need to identify factors that help poverty at a village level.

- (A) militate
 - (B) mitigate
 - (C) allay
 - (D) moderate
-

11. I wish to express solidarity you on the issue of child labour.

- (A) for
- (B) on
- (C) with

(D) in

12. His anger

- (A) with
 - (B) for
 - (C) against
 - (D) a
-

13. Statement: Passenger fares have been increased to meet budgetary deficit

Assumptions:

- I. Passenger fares were low.
- II. If the fare is not increased the deficit cannot be met.

- (A) I and II are implicit
 - (B) Only I is implicit
 - (C) Only II is implicit
 - (D) Neither I nor II are implicit
-

14. Statement: Let us announce attractive incentives for better performance

Assumptions:

- I. Performance can be improved.
- II. Incentive schemes are successful.

- (A) Both I and II are implicit
 - (B) Only I is implicit
 - (C) Only II is implicit
 - (D) Neither I nor II are implicit
-

15. Statement: The last date of submission for the project has been extended twice so far.

Conclusion:

- I. No further extension is likely.
- II. The previous submission date was unrealistic.

- (A) Only I follows
 - (B) Only II follows
 - (C) Both I & II follow
 - (D) Neither I nor II follows
-

16. Statement: The legal ban on smoking in public places may be well-intentioned but is likely to be ineffective.

Conclusion:

- I. Good intentions do not always yield desired results.
- II. It is impossible to regulate public spaces.

- (A) Only I follows
 - (B) Only II follows
 - (C) Both I & II follow
 - (D) Neither I nor II follows
-

17. Statement: Passenger fares have been increased to meet budgetary deficit.

Assumptions:

- I. Passenger fares were low.
- II. If the fare is not increased the deficit cannot be met.

- (E) I and II are implicit
- (F) Only I is implicit
- (G) Only II is implicit
- (H) Neither I nor II are implicit

18. Statement: Let us announce attractive incentives for better performance.

Assumptions:

- I. Performance can be improved.
- II. Incentive schemes are successful.

- (A) Both I and II are implicit
(B) Only I is implicit
(C) Only II is implicit
(D) Neither I nor II is implicit

19. Statement: The last date of submission for the project has been extended twice so far.

Conclusion:

- I. No further extension is likely.
- II. The previous submission date was unrealistic.

- (E) Only I follows
(F) Only II follows
(G) Both I & II follow
(H) Neither I nor II follows

20. Statement: The legal ban on smoking in public places may be well-intentioned but is likely to be ineffective.

Conclusion:

- I. Good intentions do not always yield desired results.
- II. It is impossible to regulate public spaces.

- (A) Only I follows
(B) Only II follows
(C) Both I & II follow

(D) Neither I nor II follows
