Air University Multan Campus

GUIDELINES FOR SOLVING ENTRANCE TEST PAPER

BS
- **Computer Science**

BBA
- **Human Resource Management**
- **Marketing**
- **Finance**

BBS and MBA (3.5 YEARS)
- **Human Resource Management**
- **Marketing**
- **Finance**

MS Management Science & MBA (1.5 YEARS)
- **Human Resource Management**
- **Marketing**
- **Finance**

MS
- **Computer Science**

MCS (2 years)

M. Sc. (2 years)
- **M.Sc. Mathematics**

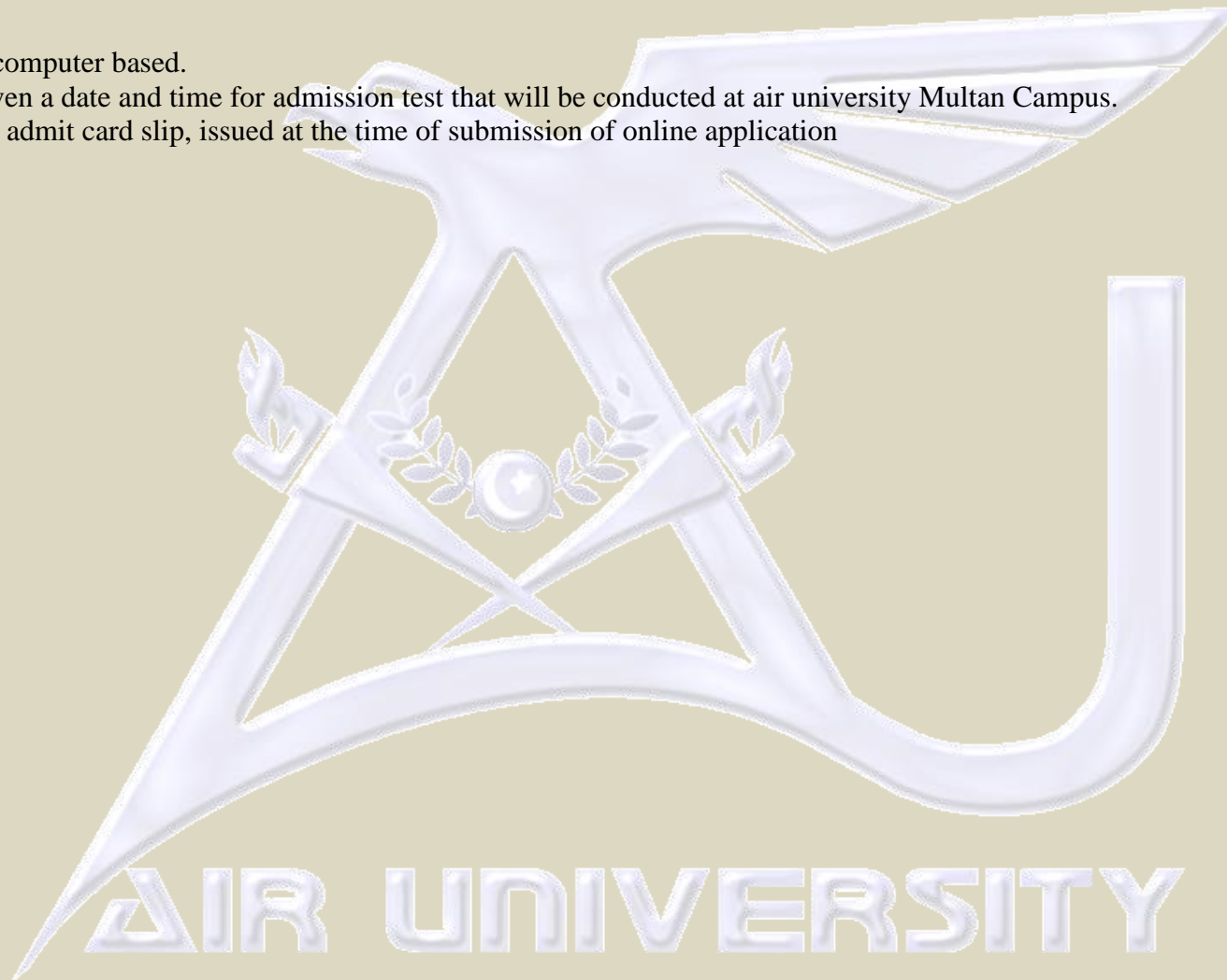M. Sc. (2 years)
- **Economics**

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INSTRUCTIONS:

1. Admission test will be computer based.
2. Each student will be given a date and time for admission test that will be conducted at air university Multan Campus.
3. Students must bring the admit card slip, issued at the time of submission of online application

Areas of Testing

a. <u>BS Computer Science</u>: The paper of BSCS will have three sections, covering subjects of:
1. <u>English</u>
2. <u>Mathematics</u>
3. <u>Physics</u>

b. <u>BBA/BBS/MBA 3.5 Courses</u> The papers for MBA and BBA Candidates are similar in structure; however, they differ in degree of difficulty. Both papers have four Sections i.e.
1. <u>English,</u>
2. <u>Arithmetic</u>
3. <u>Algebra and Geometry.</u>

c. <u>MS (Computer Science)</u> The paper of MSCS will cover subjects of
1. English,
2. Mathematics
3. Computer Science.

and subjects included in core academic background of Computer Science are as follows:
- Basics of Computer Programming
- Object Oriented Programming
- Software Engineering
- Networking
- Artificial Intelligence (AI)
- Computer Organization
- Analysis of Algorithm
- Database System

<u>Wheitage Breakup</u>

The Percentage of these three areas in the paper is as under:

1. English	20%
2. Mathematics / Quantitative	20%
3. Core Academic Background of Computer Science	60%

d. <u>MS (Management Science)/MBA 1.5</u> The paper of MSMGT/MBA1.5 will cover the core academic background of Business Administration.
The Percentage of these three areas in the paper is as under:

1. Management	40%
2. Marketing	30%
3. Accounting / Finance	30%

e. <u>M. Sc. (Economics)</u> The paper will cover subjects of English, Mathematics and will also cover the core academic background of Economics.
The Percentage of these three areas in the paper is as under:

1. Economics (Micro + Macro)	40%
2. English	30%
3. Mathematics / Quantitative	30%

f. <u>M.Sc. Mathematics / MCS</u>
The paper will cover subjects of English, Analytical and Mathematics. It will also cover the core academic background of basics to the level of BA/B.Sc. Mathematics.
The Percentage of these three areas in the paper is as under:

1. Mathematics	40%
2. English	30%
3. Analytical	30%

(For all Programs)
ENGLISH

➢ **Read the passage and the questions that follow it. Choose the best answer for each question.**

"While most desert animals will drink water if confronted with it, for many of them the opportunity never comes. Yet all living things must have water, or they will expire. The herbivores find it in desert plants. The carnivores slake their thirst with the flesh and blood of living prey. One of the most remarkable adjustments, however, has been made by the tiny kangaroo rat, who not only lives without drinking but also subsists on a diet of dry seeds containing about 5% free water. Like other animals, the kangaroo rat has the ability to manufacture water in its body by a metabolic conversion of carbohydrates. But it is notable for the parsimony with which it conserves its small supply by every possible means, expending only minuscule amounts in its excreta and through evaporation from its respiratory tract."

Q.1.   What is the main idea of this passage?

    A. **The kangaroo rat is uniquely suited to desert life.**
    B. Animals need water to exist in the desert.
    C. Herbivores and carnivores live together in the desert.
    D. Animals' metabolic systems are complex.

Q.2.   Which of the following is NOT a source of water for the desert animals?

    A. Desert plants
    B. Metabolic conversion of carbohydrates in the body.
    C. The blood of other animals
    D. **Streams.**

Q.3.   The word 'it' in line 3 refers to
    A. a living things
    B. the desert
    C. the opportunity
    D. **water**

➢ **Choose the right words to complete the following sentences:**

Q.4. The object of life is the _____ of men and women.
    A. **Development**
    B. Lives
    C. Population
    D. Competition

Q.5. The supporters of Urdu language say that the time is not far when English will be _____ by Urdu.
    A. Transformed
    B. **Replaced**
    C. Defeated
    D. Changed

Q.6. Asma is a very _____ student. She always completes her work before others.
    A. Intelligent
    B. **Industrious**
    C. Honest
    D. Respectable

➢ **Choose the word opposite in meaning to the given word (antonyms):**

Q.7. Industrious
    A. Stupid   B. Harsh   C. **Indolent**
    D. Radical

Q.8. Magnify

A. Forgive   B. Comprehend   C. Extract   **D.**
Diminish

Q.9. Mournful
A. Informal   B. Sympathetic   C. Appropriate   **D.**
Joyous

➢ **Choose the word similar in meaning to the given word (synonyms):**

Q.10. Vigorous
A. Fragile   **B. Strong**   C. Unimposing   D. Sensible

Q.11. Emphasize
A. Suspended   B. Universalize   C. Enlighten   **D. Stress**

Q.12. Stunned
A. Enthusiastic   B. Worried   **C. Astounded**
D. Sacked

➢ **In the following questions, select the pair of words which has the same relation as between the first two words (analogies):**

Q.13. Book: Cover
A. Wall: Clock
B. Mobile: Tone
C. Body: Clothes
D. Sea: Water

Q.14. Dog: Cat
A. Spoon: Dish
B. Evening: Noon
C. Peacock: Snake

D. Buffalo: Ox

Q.15. Mason: Wall
A. Fisherman: Trout
B. Author: Book
C. Congressman: Senator
D. Sculptor: Roof

➢ **Choose the right grammatical words to complete the following sentences:**

Q.16. He is the friend……………I trust most.
A. which   B. who   C. him   **D. whom**

Q.17. However honest he……………, I do not trust him.
A. might be   B. could be   C. would   **D. may be**

Q.18. He ran………………
A. quick   **B. quickly**   C. so quickly   D. so quick

(For BSCS candidates)

MATHEMATICS

1. The number of elements in power set of $A = \emptyset$, are
   (a) 0 (b) $\underline{1}$
   (c) 2 (d) None of these

2. The line $5x + 7y - 35 = 0$ and $3x - 7y - 21 = 0$ intersects at
   (a) $\underline{(7,0)}$ (b) $(1,2)$
   (c) $(2,7)$ (d) $(0,7)$

3. The domain of the function is $f(x) = \dfrac{x-2}{x^2-3x}$ is

(a) R 　　　　　　　(b) $R - \{0,2,3\}$

(c) $\underline{R - \{0,3\}}$ 　　　(d) $R - \{2\}$

4. Which of the following interval is solution of the inequality $1 - x < \dfrac{3}{2}$?

(a) $\left(\dfrac{1}{2}, +\infty\right)$ 　　　(b) $\underline{\left(-\dfrac{1}{2}, +\infty\right)}$

(c) $\left(\dfrac{3}{2}, +\infty\right)$ 　　　(d) $\left(-\infty, \dfrac{1}{2},\right)$

5. If $2^{2x-4} = 8^4$, what is the value of $4x - 2$?

(a) 8 　　　　　　(b) 16

(c) 32 　　　　　(d) $\underline{30}$

PHYSICS

Q.1　A man walks from point A to B at an average speed of 1.0 m/s and immediately returns at an average speed of 1.5 ms^{-1} .What is the average speed for the round trip?

A. 0.33 m/s
B. 1.20 m/s
C. 1.25 m/s
D. 2.50 m/s

Q.2　A net force of 10 N accelerates object to 5.0 m/s².What net force would be required to

Accelerate the same object 1.0 m/s²?

A. 1.0 N
B. 2.0 N
C. 5.0 N
D. 50 N

Q.3　The product of mass and velocity is called.

A. Acceleration,
B. Moment Arm,
C. Negative Acceleration,
D. Momentum

(For BBA, BBS & MBA 3.5 candidates)

Arithmetic:

1. 48 per cent of first number is 60 per cent of the second number. What is the respective ratio of the first number to the second number?

(a) $4:7$ 　　　　　(b) $4:5$

(c) $\underline{5:4}$ 　　　　　(d) None of these

2. A sum of money is divided among A and B in the ratio of 4:5 respectively. If the share of B is Rs. 1350, then what is the amount A get?

(a) **Rs. 1080** 　　　(b) Rs. 2430
(c) Rs. 9730 　(d) Rs. 1150

3. Which of the following is ascending ordering of the numbers?

(a) $\dfrac{1}{8} < \dfrac{1}{2} < \dfrac{1}{4}$ 　(b) $\dfrac{1}{8} < \dfrac{1}{4} < \dfrac{1}{2}$

(c) $\dfrac{1}{2} < \dfrac{1}{8} < \dfrac{1}{4}$ 　(d) $\dfrac{1}{2} < \dfrac{1}{4} < \dfrac{1}{8}$

4. $\dfrac{1}{4} + \left(\dfrac{4}{3} \times \dfrac{3}{25}\right) - \left(\dfrac{1}{5} \div \dfrac{5}{4}\right) =$

(a) $\frac{1}{4}$ (b) $\frac{4}{5}$

(c) 0 (d) $\frac{2}{3}$

5. A car travels m miles in h hours. At that rate, how many miles does it travel in 90 minutes?

(a) $\dfrac{3m}{2h}$ (b) $\dfrac{3h}{2m}$

(c) $90mh$ (d) $\dfrac{45}{mh}$

Algebra:

6. The solution of equation $3j + h = jk$ for j in terms of h and k is

(a) $j = \dfrac{h}{k-3}$ (b) $j = \dfrac{k-3}{h}$

(c) $j = \dfrac{h}{k+3}$ (d) $j = \dfrac{jk-h}{3}$

7. If $(2x).(3x) = \left(\frac{4}{16}\right).\left(\frac{3}{8}\right)$ and $x > 0$, then what is the value of x

(a) $\dfrac{1}{64}$ (b) $\dfrac{1}{8}$

(c) $\dfrac{1}{4}$ (d) $-\dfrac{1}{8}$

8. If $4^a = 8^b$, then the ratio of a to b is

(a) $\dfrac{2}{3}$ (b) $\dfrac{3}{2}$

(c) $\dfrac{1}{2}$ (d) $\dfrac{2}{1}$

9. The sum of the coefficients in the expansion of $(x + y)^3$ is

(a) 0 (b) 10

(c) 8 (d) 14

10. One integer is four times another. The sum of the integers is 35. What is the value of the lesser integer?

(a) 7 (b) 14

(c) 28   (d) None of these

Geometry:

11. If the area of a circle is $\dfrac{\pi}{16}$, what is the diameter of the cirlce?

(a) 4 (b) 8

(c) $\dfrac{1}{4}$ (d) $\dfrac{1}{2}$

12. The length of base and perpendicular of a right angle triangle are 8 and 6, then what is the length of hypotenuse?

(a) $\dfrac{10}{100}$ (b) $2\sqrt{7}$

(c) 100 (d) None of these

13.

y°

x° x° 100
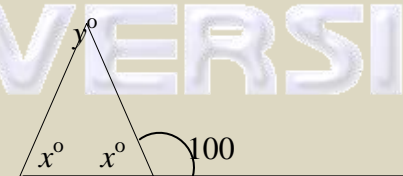
Figure not drawn to scale

In this figure, what is value of y?

(a) $\dfrac{20}{80}$ (b) 40

(c)   (d) *cannot be determined*

14. Area of square field is 400 m^2. What is cost of boundary wall if the rate is Rs. 250 per meter?

(a) Rs. 10000   (b) Rs. 15000
(c) **Rs. 20000**   (d) Rs. 5000

15. The angles of a triangle are in the ratio $1:3:5$. What is the measure, in degrees, of the largest angle of the triangle?

(a) $20°$ (b) $60°$
(c) $90°$ (d) $\underline{100°}$

(For M.Sc. Mathematics / MCS)

Mathematics

1. The function $f(x) = e^x$ is continuous at ?

(a) $x = 1$ (b) $x = e$
(c) All real number   (d) All real numbers except $x = 0$

2. $\int_0^{+\infty} \dfrac{1}{x} =$?

(a) 1 (b) 0
(c) e (d) The integral does not exits

3. The solution of the differential equation $\dfrac{dy}{dx} + y = 3e^{2x}$

(a) e^{2x} (b) e^{-x}
(c) $-e^{2x}$ (d) No solution

4. For what value of k, the function $f(x) = 2x^2 - kx + 2$ yields $f(-1) = 5$

(a) -1 (b) 1
(c) 7 (d) 0

5. The solution of system of equations
$x + 2y = 5, \; 3x + 6y = 15$ is

(a) $(1, 2)$ (b) $(1, 2)$ and $(1, 1)$
(c) Infinite solution   (d) No solution

Analytical/Logical Reasoning:

Directions: The following questions are based on a passage or set of conditions. To answer the question, choose the answer you think is most appropriate among the given options.

Questions1-3
Three men (Tahir, Pervaiz and Javed) and three women (Elena, Ayesha and Kiran) are spending a few months at Abbottabad. They are to stay in a row of nine cottages, each one living in his or her own cottage. There are no others staying in the same row of houses.

I. Ayesha, Tahir and Javed do not want to stay in any cottage, which is at the end of the row.
II. Elena and Ayesha are unwilling to stay besides any occupied cottage.
III. Kiran is next to Pervaiz and Javed.

IV. Between Ayesha and Javed's cottage there is just one vacant house.
V. None of the girls occupies adjacent cottages.
VI. The house occupied by Tahir is next to an end cottage.

6. Which of the above statements can be said to have been derived from two other statements?
   a. Statement 1
   b. Statement 2
   c. Statement 3
   d. Statement 5
   e. Statement 6

7. How many of them occupy cottages next to a vacant cottage?
   a. 2
   b. 3
   c. 4
   d. 5
   e. 6

8. Which among these statement(s) are true?
   i. Ayesha is between Elena and Javed.
   ii. At the most four persons can have occupied cottages on either side of them.
   iii. Tahir stays besides Pervaiz.
   a. I only
   b. II only
   c. I and III only
   d. II and III only
   e. I, II and III

(For MSC Economics candidates)

Mathematics:

1. 48 per cent of first number is 60 per cent of the second number. What is the respective ratio of the first number to the second number?
   (a) $4:7$
   (b) $4:5$
   (c) $5:4$ (underlined)
   (d) None of these

2. A sum of money is divided among A and B in the ratio of 4:5 respectively. If the share of B is Rs. 1350, then what is the amount A get?
   (a) Rs. 1080 (underlined)
   (b) Rs. 2430
   (c) Rs. 9730
   (d) Rs. 1150

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   (a) $\frac{1}{8} < \frac{1}{2} < \frac{1}{4}$
   (b) $\frac{1}{8} < \frac{1}{4} < \frac{1}{2}$ (underlined)
   (c) $\frac{1}{2} < \frac{1}{8} < \frac{1}{4}$
   (d) $\frac{1}{2} < \frac{1}{4} < \frac{1}{8}$

4. $\frac{1}{4} + \left(\frac{4}{3} \times \frac{3}{25}\right) - \left(\frac{1}{5} \div \frac{5}{4}\right) =$
   (a) $\frac{1}{4}$
   (b) $\frac{4}{5}$
   (c) 0
   (d) $\frac{2}{3}$

5. A car travels m miles in h hours. At that rate, how many miles does it travel in 90 minutes?
   (a) $\frac{3m}{2h}$
   (b) $\frac{3h}{2m}$
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(c) 28   (d) None of these

Economics

11.   The value of marginal propensity to consume is always:

I: less than 0   II: greater than 1

III: equal to 1   IV: less than or equal to 1

12.   A good with negative income effect is called:

I: inferior   II: substitute

III: complementary   IV: necessity of life

13.   The difference between what a consumer is willing to pay and what he actually pays is called:

I: consumer surplus   II: consumer savings

III: consumer profit   IV: producer surplus

14.   GDP is the value of goods and services produced during a year:

I: by the nationals of a country

II: within the boundaries of a country

III: by the nationals within the boundaries of a country

IV: none of them

15.   Inflation can be best defined as:

I: goods are in short supply

II: annual increase in general price level

III: increase in input prices

IV: none of the

WISH YOU BEST OF LUCK