DOGAR'S UNIQUE

Latest Edition

According to the New Syllabus

PU-E USAT-E

Pre-ENGINEERING

Admission Test Guide

After 12-Years / Equivalent Education in Any Discipline

Fully Solved Objective MCQs With Explanatory Answers

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STUDY MATERIAL

Criteria and Subject Division	Subject 100% Weight	Page #
PART I: Number of Test Items (75 MCQs) Time Allowed 100 Minutes		
A: Verbal Reasoning	**20 MCQs**	**17**
A1: Analogy	05	17
A2: Synonym/ Antonym	04	45
A3: Sentence Completion	06	63
A4: Comprehension	05	70
B: Quantitative Reasoning	**25 MCQs**	**89**
B1: Arithmetic	06	93
B2: Algebra and Functions	04	134
B3: Geometry	03	173
B4: Equations	03	208
B5: Statistics	03	216
B6: Scenario Based/Mental Mathematics	06	230
C: Physics	**10 MCQs**	**249**
D: Chemistry	**10 MCQs**	**314**
E: Mathematics	**10 MCQs**	**361**
Part II: Time Allowed 40 Minutes		
Argument Based Essay Writing Skills 01 out of 03 (Either in English or Urdu)	15 Marks	391
Narrative Based Essay Writing Skills 01 out of 03 (Either in English or Urdu)	10 Marks	410

A2 Synonyms / Antonyms |04 MCQs|

Synonyms: It may be possible to choose the correct answer by rejecting those words that simply cannot be the proper choice. This is done by a process of reasoning and elimination. However, you are advised to use this process only when you are not certain of answer. Remember that this process is very time-consuming.

Solved Example:

Directions: *In the following question, choose the word which is most nearly the same in meaning to the* **bold** *word and mark it in the Answer Sheet.*

Example: High:

(a) Tall (b) Short
(c) Fat (d) Thin

Explanation: Here the word 'tall' is the nearest in meaning to the word 'high'. So, 'A' is the correct answer.

Examination Questions

1. **He delivered a lengthy speech in which he committed several ludicrous mistakes.**
   (a) Serious **(b) Absurd✓**
   (c) Funny (d) Glaring
2. **Timely first aid resuscitated the patient.**
   (a) Cured **(b) Revived✓**
   (c) Rescued (d) Soothed
3. **His rustic speech and clothes led us to think of him as an ignorant villager.**
   (a) Unconventional (b) Old-fashioned
   (c) Unsophisticated✓ (d) Strange
4. **The unprecedented drought in several parts of the country this year led to the onset of various diseases.**
   (a) Outbreak✓ (b) Onslaught

How to Attempt Synonyms:

1. Whenever possible, the question-word & answer-word must be the same part of speech. For example, if the question-word is in the past tense, the answer should also be in the past tense, and so on.
2. A favourite trick of the examiner is to include antonym in answer choices for a synonym question. Be careful about what is asked before answering a question.
3. Don't fumble if you don't get the dictionary meaning. You are only expected to choose the word, which has most nearly the same meaning.
4. Don't ponder over a question for too long. It is better to answer first those questions you know. Then come back to those that you don't know.
5. It may be possible to choose the correct answer by rejecting those words that simply cannot be the proper choice. This is done by a process of reasoning and elimination. However, you are advised to use this process only when you are not certain of the answer. *Remember that this process is very time-consuming.*

But the point is that there are nothing like exact synonyms, but there are words which are similar in meaning. So, choosing the right word is a test of your overall knowledge of English rather than vocabulary.

= (The sum of the first $n-1$ terms),

ion yields $31 = 20 + n$th term. Hence,

9
)d
1)0.8

by dividing consecutive terms),
10.

nomial. Each monomial is

nt and one or more variables,

e integer in exponent, and
th a non-negative integer

he degree of monomial.

Solution:
In algebraic expression $-3x^2y$, the degree of the monomial is 3, because the exponents of x and y are 2 and 1 respectively therefore their sum is $(2 + 1 = 3)$. Similarly the degree of the expressions $7x^3y$ and $-18xy^2$ are 4 and 3 respectively.

Note:
In monomial, the constant is called the numerical coefficient or simply the coefficient of the monomial.
$-3x^2y$, $7x^3y$ and $-18xy^2$ are monomials of coefficient -3, 7, and -18 respectively.

Multiplication of Monomials:
The process of multiplication is illustrated in the following example:

Example : What is the value of $-5xy^2$, when $x = -2$ and $y = -3$

Solution:
First of all write the coefficient of the monomial, then substitute the value of x and y in monomial. Then evaluate:

$$-5(-2)(-3)^2 = -5(-2)(9) = 90$$

Polynomial:
A sum of a finite number of monomials is called a polynomial. Each monomial in a polynomial is called a term of the polynomial.

Degree of a Polynomial:
The degree of a polynomial is the largest degree of the terms in the polynomial.

What are like terms in a Polynomial?
Terms of polynomial that have exactly the same variables raised to the same powers are called like terms.

Remember: Only like terms in a polynomial can be combined.

Arithmetic Operations on Polynomials:
We use usual law of arithmetic, to add subtract, multiply and divide polynomials.

Addition and Subtraction:
Polynomials are added or subtracted by combining like terms.

Example : $(2x^3 + 3x^2 + 7x + 6) + (4x^2 + 3x - 2) - (5x^2 + 4x)$

$= 2x^3 + (3x^2 + 4x^2 - 5x^2) + (7x + 3x - 4x) + (6 - 2)$
$= 2x^3 + 2x^2 + 6x + 4$

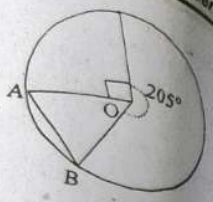
The rules for adding like terms are:

Rule 1:
If all the terms are positive in a polynomial, then add their coefficients.

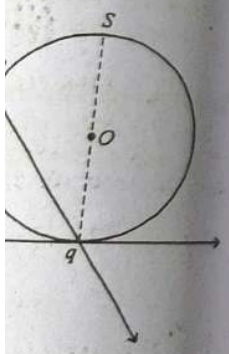
Example : Find the value of $8x^2 + 2x^2 + 7x^2$

Solution: Here we have to increase 8 like things by 2 and 7 like things of the same kind, and aggregate is 17 of each thing.

Rule 2: If all the terms in a polynomial are negative add the coefficient numerically and



id-point of a chord meets the

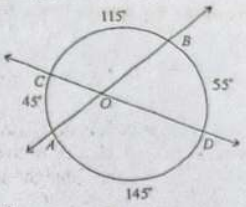


Explanation:
In circle O as shown in the figure, secant QR and tangent PQ intersect at point Q on the circle, forming angle PQR. The above theorem focuses upon the relationship between the measure of this angle and the degree measure of the intercepted arc, $\overset{\frown}{QR}$.

According to this theorem, $\angle PQR = \frac{1}{2}(120)$

$= \frac{1}{2}(\text{Arc } QR)$

$= 60°$



Theorem 2:
If two secants (or chords) intersect in the interior of a circle, the measure of an angle formed is one half the sum of the measures of he arcs intercepted by the angle and its vertical angle.

Explanation:
When two secants AB and CD intersect in the interior of a circle, as circle O shows to the right, two pair of vertical angles are formed. According to the given theorem

$\angle AOC = \angle DOB = \frac{1}{2}(55° + 45°)$

$= \frac{1}{2}(100) = 50°$

and $\angle AOD = \angle COB = \frac{1}{2}(145° + 115°)$

$= \frac{1}{2}(260)$

$= 130°$

Multiple Choice Questions (MCQs)

Q1. If the area of a circle is 81π, then its circumference is:

(A) 61π (B) 20π

(C) 18π (D) 16π

Q2. If circumference of a circle is 3π, then its area is:

(A) $\frac{7\pi}{2}$ (B) $9\pi^2$

(C) $4\pi^2$ (D) $\frac{9\pi}{4}$

Q3. If a circle is inscribed in a square of area 4, then the area of the circle is:

(A) π (B) $\frac{\pi}{2}$

(C) $\frac{\pi}{4}$ (D) $\frac{3\pi}{4}$