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Topic Break Down

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QUESTION NO: 1

Woodraw Wilson was referring to the liberal idea of the economic market when he said that the free enterprise system is the most efficient economic system. Maximum freedom means maximum productiveness; our “openness” is to be the measure of our stability. Fascination with this ideal has made Americans defy the “Old World” categories of settled possessiveness versus unsettling deprivation., the cupidity of retention versus the cupidity of seizure, a “status quo” defended of attacked. The United States, it was believed, had no status quo ante. Our only “station” was the turning of a stationary wheel, spinning faster and faster. We did not base our system on property but opportunity-which meant we based it not on stability but on mobility. The more things changed, that is, the more rapidly the wheel turned, the steadier we would be. The conventional picture of class politics is composed of the Haves, who want a stability to keep what they have, and Have-Nots, who want a touch of instability and change in which to scramble for the things they have not. But Americans imagined a condition in which speculators, self-makers, runners are always using the new opportunities given by our land. These economic leaders (front-runners) would thus be mainly agents of Change. The nonstarters were considered the ones who wanted stability, a strong referee to give them some position in the race, a regulative hand to calm manic speculation; an authority that can call things to a half begin things again from compensatorily staggered “starting lines”.: Reform” in America has been sterile because it can imagine no change except through the extension of this metaphor of the race, wider inclusion of competitors, “a piece of the action.” As it were, of the disenfranchised. There is no attempt to call off the race. Since our only stability is change. America seems not to honor the quite work that achieves social interdependence and stability. There is, in our legends, no heroism of the office clerk, no stable industrial work force of the people who actually make the system work. There is no pride in being an employee (Wilson asked for a return to the time when everyone was an employer). There has been no boasting about our social workers-they are need; empty boasts from the past make us ashamed of our present achievements, make us try to forget or deny the, move away from them. There is no honor but in the wonderland race we must all run, all trying to win, none winning in the end (for there is no end).

According to the passage, "Old World" values were based on

A. ability

B. property

C. family connections

D. guild hierarchies

E. education

ANSWER: B

Explanation:

property is correct because the passage explicitly contrasts the United States’ ideal of opportunity, mobility, and continual change with the “Old World” order of settled possession and a defended status quo. In the writer’s description, traditional class politics revolves around those who possess assets seeking to preserve them and those without assets seeking change that might allow them to acquire them. This is an economic and social arrangement rooted in ownership: property provides a settled position, gives people something to retain, and makes stability valuable. The passage then states the contrast directly: Americans “did not base our system on property but opportunity.” That sentence identifies property as the principle from which the older, more stable social order was understood to operate. The American ideal, by comparison, values the race for new opportunities rather than a fixed place secured through possession. In political and social thought, property has often been associated with established interests, social standing, and preservation of existing arrangements; see the Stanford Encyclopedia of Philosophy’s overview of property and the Encyclopaedia Britannica discussion of property.

QUESTION NO: 2

In an essay competition the odds against competitors A, B, C and D are 2:1, 3:1, 4:1 and 5:1 respectively. Find the probability that one of them wins the competition.

A. 11/120

B. 114/120

C. 127/150

D. 2/17

E. 135/157

F. 2/3

ANSWER: F

Explanation:

The correct probability is **2/3**. “Odds against” of 2:1 means the probability of A winning is 1/(2+1) = 1/3, so the probability of A not winning is 2/3. Similarly, the probabilities that B, C, and D do not win are 3/4, 4/5, and 5/6 respectively. To find the probability that at least one of the named competitors wins, use the complement rule: first calculate the probability that none of them wins, then subtract that result from 1. Assuming the outcomes represented by the stated odds are treated as independent for this probability exercise, the probability that none wins is (2/3) × (3/4) × (4/5) × (5/6) = 1/3. Therefore, the probability that one or more of them wins is 1 − 1/3 = 2/3. This uses the standard complement relationship, P(at least one event occurs) = 1 − P(no events occur), as described in NIST’s probability reference. For an overview of converting odds into probabilities, see Odds.

QUESTION NO: 3

At the time Jane Austen’s novels were published – between 1811 and 1818 – English literature was not part of any academic curriculum. In addition, fiction was under strenuous attack. Certain religious and political groups felt novels had the power to make so called immoral characters so interesting young readers would identify with them; these groups also considered novels to be of little practical use. Even Cole-ridge, certainly no literary reactionary, spoke for many when he asserted that “novel-reading occasions the destruction of the mind’s power”.

These attitudes towards novels help explain why Austen received little attention from early nineteenth century literary critics. (In any case, a novelist published anonymously, as Austin was, would not be likely to receive much critical attention). The literary response that was accorded her, however, was often as incisive as twentieth century criticism. In his attack in 1816 on novelistic portrayals “outside of ordinary experience, “for example, Scott made an insightful remarks about the merits of Austen’s fiction. Her novels, wrote Scott, “present to the reader an accurate and exact. picture of ordinary everyday people and places, reminiscent of seventeenth –century Flemish painting. “Scott did not use the word “realistic probability in judging novels. The critic whitely did not use the word realism either, but he expressed agreement with Scott’s evaluation, and went on to suggest the possibilities for moral instruction in what we have called Austen’s realistic method. Her characters, wrote whitely, are persuasive agents for moral truth since they are ordinary persons “so clearly evoked that was feel an interest in their fate as if it were our own” Moral instruction, explained Whitely, is more likely to be effective when conveyed through recognizably human and interesting characters then when imparted by a sermonizing narrator. Whately especially praised Austen’s ability to create characters who “mingle goodness and villainy, weakness and virtue, as in life they are always mingled. “Whately concluded his remarks by comparing Austen’s art of characterization to Sicken’s, stating his preference for Austin’s. often anticipated the reservations of twentieth-century critics. An example of such a response was Lewes’ complaint in 1859 that Austen’s range of subjects and characters was too narrow. Praising her verisimilitude, Lewes added that nonetheless her focus was too often upon only the unlofty and the common place. (Twentiethcentury Marxists, on the other hand, were to complain about what they saw as her exclusive emphasis on a lofty upper-middle class) in any case, having been rescued by some literary critics from neglect and indeed gradually lionized by them, Austen’s steadily reached, by the mid-nineteenth century, the enviable pinnacle of being considered controversial.

The authors mentions that English literature "was" not part of any academic curriculum " in the early nineteenth century in order to

A. emphasize the need for Jane Austen to in create ordinary, everyday character in her novels.

B. give support to those religious and political groups that had attacked fiction

C. give one reason why Jane Austen's novels received little critical attention in the early nineteenth century.

D. Suggest the superiority of an informal and unsystematized approach to the study of literature

E. contrast nineteenth-century attitudes towards English literature with those towards classical literature

ANSWER: C

Explanation:

The statement that English literature “was not part of any academic curriculum” establishes an important historical context for Austen’s initial critical reception. The passage immediately follows this observation with broader hostility to fiction and then explicitly states, “These attitudes towards novels help explain why Austen received little attention from early nineteenth century literary critics.” Thus, the curricular status of English literature is presented as one factor contributing to the limited institutional and critical attention paid to novels during Austen’s lifetime. Because English literature was not yet a formal academic subject, there was less established scholarly infrastructure for sustained literary study, evaluation, and criticism of contemporary English novelists. The author also notes Austen’s anonymous publication as an additional reason she was unlikely to attract much notice, reinforcing that the purpose is explanatory rather than evaluative. Therefore, “give one reason why Jane Austen's novels received little critical attention in the early nineteenth century” accurately identifies the function of the statement within the passage. Historical background on the gradual development of English literature as an academic discipline is available from Encyclopaedia Britannica: English literature, while Austen’s publication history and early reception are discussed by the Jane Austen Society of North America.

QUESTION NO: 4

One of two events must happen. Given that the chance of one is two-third of the other, find the odds in favour of the other.

A. 2:5

B. 3:5

C. 5:3

D. 2:3

E. 3:2

ANSWER: E

Explanation:

Let the probability of the event described as “the other” be represented by three equal parts. Since the chance of one event is two-thirds of the other, the probability of the first event is then two equal parts. Because one of the two events must happen, they are complementary outcomes and their combined probability is the total of five equal parts. Therefore, the probability of “the other” is three-fifths, while the probability that it does not occur is two-fifths.

Odds in favour compare favourable outcomes with unfavourable outcomes, not the probability written as a fraction of the total. For “the other,” the favourable portion is three parts and the unfavourable portion is two parts. Hence, the odds in favour are **3:2**. This is consistent with the standard relationship between probability and odds: if an event has probability p, its odds in favour are $p:(1 - p)$. Here, three-fifths gives three-fifths to two-fifths, which simplifies directly to 3:2. See NIST’s explanation of odds and OpenStax probability terminology for the probability and odds concepts used.

QUESTION NO: 5

Recent years have brought minority-owned businesses in the United States unprecedented opportunities-as well as new and significant risks. Civil rights activists have long argued that one of the principal reasons why Blacks, Hispanics and the other minority groups have difficulty establishing themselves in business is that they lack access to the sizable orders and subcontracts that are generated by large companies. Now congress, in apparent agreement, has required by law that businesses awarded federal contracts of more than $500,000 do their best to find minority subcontractors and record their efforts to do so on forms field with the government. Indeed, some federal and local agencies have gone so far as to set specific percentage goals for apportioning parts of public works contracts to minority enterprises.

Corporate response appears to have been substantial. According to figures collected in 1977, the total of corporate contracts with minority business rose from $77 to $1. 1 billion in 1977. The projected total of corporate contracts with minority business for the early 1980’s is estimated to be over $3 billion per year with no letup anticipated in the next decade. Promising as it is for minority businesses, this increased patronage poses dangers for them, too. First, minority firms risk expanding too fast and overextending themselves financially, since most are small concerns and, unlike large businesses they often need to make substantial investments in new plants, staff, equipment, and the like in order to perform work subcontracted to them. If, there after, their subcontracts are for some reason reduced, such firms can face potentially crippling fixed expenses. The world of corporate purchasing can be frustrating for small entrepreneur’s who get requests for elaborate formal estimates

and bids. Both consume valuable time and resources and a small company's efforts must soon result in orders, or both the morale and the financial health of the business will suffer.

A second risk is that White-owned companies may-seek to cash inon the increasing apportionments through formation of joint ventures with minority-owned concerns, of course, in many instances there are legitimate reasons for joint ventures; clearly, white and minority enterprises can team up to acquire business that neither could Third, a minority enterprise that secures the business of one large corporate customer often runs the danger of becoming – and remaining dependent. Even in the best of circumstances, fierce competition from larger, more established companies makes it difficult for small concerns to broaden their customer bases; when such firms have nearly guaranteed orders from a single corporate benefactor, they may truly have to struggle against complacency arising from their current success.

The authors implied that the minority owned concern that does the greater part of its business with one large corporate customer should

A. avoid competition with the larger, more established concerns by not expanding

B. concentrate on securing even more business from that corporation

C. try to expand its customer base to avoid becoming dependent on the corporation

D. pass on some of the work to be done for the corporation to other minority owned concerns.

E. use its influence with the other corporation to promote subcontracting with other minority concerns.

ANSWER: C

Explanation:

The correct answer is "try to expand its customer base to avoid becoming dependent on the corporation." The passage explicitly identifies dependence on one large corporate customer as a major risk for a minority-owned enterprise. A business receiving nearly guaranteed orders from a single benefactor may become complacent because its immediate success reduces the pressure to seek additional clients. The authors imply that this reliance can persist, leaving the firm vulnerable if the large customer reduces, changes, or ends its purchasing relationship. Therefore, the prudent response is to broaden the customer base while the company has the resources and credibility gained from its current contract. Diversifying customers helps create a more stable revenue stream, supports long-term independence, and reduces the financial exposure associated with reliance on one buyer. This conclusion follows directly from the passage's concern that small firms can have difficulty broadening their markets but should resist complacency created by apparently secure business. The principle also aligns with the U.S. Small Business Administration's guidance on developing market opportunities and growing beyond a narrow customer pool: SBA—Grow your business. For broader context on supplier diversity and access to corporate procurement opportunities, see the U.S. Minority Business Development Agency.

QUESTION NO: 6

A positive environment leads to great employee satisfaction whereas negative one mars employee performance.

A. leads to great employee satisfaction whereas negative

B. leads to greater employee satisfaction whereas negative

C. leads to greatest employee satisfaction whereas negative

D. leads to grater employee satisfaction whereas negative

E. leads to be great employee satisfaction whereas negative

ANSWER: B

Explanation:

"leads to greater employee satisfaction whereas negative" is correct because *greater* is the comparative form of *great* and appropriately expresses a comparison between the effects of a positive workplace environment and those of a negative one. The sentence contrasts two conditions: a positive environment improves employees' satisfaction, while a negative

environment harms their performance. A comparative adjective is therefore needed to show that satisfaction is higher under the positive condition than under the negative condition.

In standard English, *great* means very good or considerable, but it does not itself establish the implied comparison. *Greater* means higher in degree or amount, which fits naturally with the countable-abstract noun phrase “employee satisfaction.” The revised construction reads smoothly as: “A positive environment leads to greater employee satisfaction, whereas a negative one mars employee performance.” Adding the article before “negative one” would further improve grammatical completeness, although the tested word choice is correctly supplied by *greater*. For guidance on comparative adjective forms and their use in comparisons, see Cambridge Dictionary Grammar and Purdue OWL.

QUESTION NO: 7

In a class test there are 5 questions. One question has been taken from each of the 4 chapters. The first two chapters have 3 questions each and the last two chapters have 6 questions each. The fourth question can be picked from any of the chapters. How many different question papers could have been prepared?

A. 540

B. 1260

C. 1080

D. 400

E. 4860

F. 2268

ANSWER: F

Explanation:

The correct total is 2268. Since the paper has five questions and one question must come from each of four chapters, one chapter must contribute two distinct questions while each of the other three contributes one. The wording “fourth question” is evidently intended to identify the additional question that may be selected from any chapter.

Count the possible papers according to which chapter supplies the extra question. If it is one of the chapters containing three questions, select two of its questions in $\binom{3}{2}=3$ ways, then select one question from the other three chapters. This gives $3\times3\times6\times6=324$ papers for each such chapter. If it is one of the chapters containing six questions, select two questions in $\binom{6}{2}=15$ ways and one from each remaining chapter, giving $3\times3\times15\times6=810$ papers for each such chapter. Therefore, the total is $324+324+810+810=2268$.

This uses combinations because the order in which selected questions are listed does not create a different question paper. The counting principle and combination formula are described by OpenStax and Wikipedia’s combination reference.

QUESTION NO: 8

Open communication lines between the employer and employee is equally important.

A. lines between the employer and employee is equally

B. lines between the employer and employee was equally

C. lines between the employer and employee has equally

D. lines between the employer and employee are equally

E. lines between the employer and employee have equally

ANSWER: D

Explanation:

The correct completion is “lines between the employer and employee are equally” because it produces the grammatically complete sentence: “Open communication lines between the employer and employee are equally important.” The grammatical subject is “Open communication lines,” whose head noun is the plural noun “lines.” A plural subject requires the plural present-tense linking verb “are.” The intervening prepositional phrase “between the employer and employee” supplies information about which communication lines are meant, but it does not change the number of the subject. “Equally” functions as an adverb modifying the adjective “important,” indicating that these communication lines have the same degree of importance. The resulting construction follows the standard subject–verb agreement pattern and uses a linking verb to connect the plural subject with its subject complement, “important.” Clear agreement between a subject and its verb is essential in formal writing because it makes the relationship between the sentence’s main elements precise and easy to read. For guidance on subject–verb agreement, see Purdue OWL: Subject-Verb Agreement and Grammarly: Subject-Verb Agreement.

QUESTION NO: 9

In the editorial group's photograph of a school all the 5 teachers are to be seated in the front row. Four girls are to be in the second row and six boys in the third row ' the principal has a fixed seat in the first row, then how many arrangements are possible?

A. 237144

B. 251820

C. 502340

D. 72000

E. 2073600

F. 414720

ANSWER: F

Explanation:

The correct total is 414720. Because the principal has a fixed seat in the front row, that position is no longer variable. The remaining four teachers can occupy the other four front-row seats in 4! ways, which equals 24 arrangements. The four girls occupy the second row and can be ordered independently in 4! ways, again giving 24 arrangements. Similarly, the six boys occupy the third row and can be arranged in 6! ways, or 720 arrangements.

These row arrangements are independent: choosing an order for the remaining teachers does not restrict the possible order of the girls or boys. Therefore, the multiplication principle applies. The total number of photographs is 4! × 4! × 6! = 24 × 24 × 720 = 414720. This uses the standard permutation rule that arranging n distinct people in distinct positions gives $n!$ possible orders, together with the product rule for independent stages. See OpenStax: Permutations and Combinations and Encyclopaedia Britannica: Combinatorics.

QUESTION NO: 10

A box contains 6 red, 4 white and 5 black balls. A person draws 4 balls at random. Find the probability that among the four balls, there is at least one of each colour.

A. 31/91

B. 15/91

C. 48/91

D. 24/91

E. 12/91

ANSWER: C

Explanation:

The correct probability is **48/91**. Since four balls are drawn and all three colours must appear at least once, the colour distribution must be two balls of one colour and one ball of each of the other two colours. There are three possible cases. If two red balls are selected, the number of selections is C(6,2) × C(4,1) × C(5,1) = 300. If two white balls are selected, the count is C(6,1) × C(4,2) × C(5,1) = 180. If two black balls are selected, the count is C(6,1) × C(4,1) × C(5,2) = 240. Therefore, the number of favourable selections is 300 + 180 + 240 = 720.

The total number of equally likely ways to draw four balls from fifteen is C(15,4) = 1,365. Thus the required probability is 720/1,365, which simplifies by dividing numerator and denominator by 15 to 48/91. This uses the standard hypergeometric counting approach: count unordered favourable selections and divide by all unordered selections. See Hypergeometric distribution and combinatorial probability principles.

QUESTION NO: 11

The facts are well known. About half of all Indian children are undernourished, more than half suffer from anemia, a similar proportion escapes full immunization.

A. About half of all Indian children are undernourished, more than half suffer from anemia, a similar

B. About half of all Indian children are undernourished, and more than half suffer from anemia, a similar

C. About half of all Indian children are undernourished, and more than half suffer from anemia, a similar

D. About half of all Indian children are undernourished and, more than half suffer from anemia, a similar

E. About half of all Indian children are undernourished; more than half suffer from anemia; and a similar proportion escapes full immunization.

ANSWER: E

Explanation:

“About half of all Indian children are undernourished; more than half suffer from anemia; and a similar proportion escapes full immunization.” is the correct revision because it preserves the three related factual statements while separating them with semicolons. Each portion has its own subject and verb and can stand as an independent clause: one states that children are undernourished, one states that children suffer from anemia, and one states that a proportion escapes full immunization. Semicolons are appropriate when closely related independent clauses are presented in a series without a coordinating conjunction joining every clause. This punctuation makes the relationships among the statistics clear and avoids a run-on construction. The final conjunction “and” appropriately signals that the final statistic is the last item in the coordinated series. For guidance on using semicolons between closely related independent clauses, see Purdue OWL: Semicolons. The Merriam-Webster semicolon guide also explains that a semicolon can link complete, closely connected statements.

QUESTION NO: 12

The father died without leaving a will, and since one of the sons was abroad at the time, the other took the cat's share of the property for himself.

A. the other took the cat's share of the property for himself

B. the other took the rat's share of the property for himself

C. the other took the tiger s share of the property for himself

D. the other took the lion's share of the property for himself

E. the other took the elephant's share of the property for himself

ANSWER: D

Explanation:

The correct expression is *"the other took the lion's share of the property for himself."* "The lion's share" is a standard English idiom meaning the largest, greatest, or most valuable portion of something. In this context, the father's property is to be divided after his death, and the son who acted while his brother was abroad took most of the inheritance. The idiom therefore conveys that he appropriated the major part of the property, rather than merely an ordinary or equal portion.

The phrase is traditionally associated with fables in which a lion claims most of a shared reward because of its strength and dominance. In modern usage, it applies broadly to money, work, benefits, resources, blame, or property whenever one person or group receives or takes the predominant amount. Its meaning fits the sentence's implication of unfair advantage in an inheritance situation. Cambridge Dictionary defines "the lion's share" as the largest part of something, and Merriam-Webster similarly defines it as the largest portion or share. See Cambridge Dictionary and Merriam-Webster.

QUESTION NO: 13

In a lottery a person chooses 6 different numbers from 1 to 20. If these numbers match with the six numbers chosen by the lottery committee then he wins the lottery. What is his probability of winning the prize?

A. 1/1615

B. 1/6460

C. 1/19380

D. 1/3876

E. 1/38760

ANSWER: E

Explanation:

The correct probability is **1/38760**. The player's selection consists of six distinct numbers chosen from the numbers 1 through 20. Because winning depends only on whether the same six numbers are selected, rather than the order in which they are selected, the number of possible lottery outcomes is found with combinations. The number of ways to choose six numbers from 20 is:

C(20, 6) = 20! / (6! × 14!) = 38,760.

There is exactly one winning set among these 38,760 equally likely sets: the set containing the six numbers selected by the player. Therefore, the probability of matching all six lottery numbers is one favorable outcome divided by 38,760 total possible outcomes, giving **1/38,760**. This assumes that the lottery committee also chooses six different numbers uniformly at random from the same set of 20 numbers. The use of combinations here follows the standard counting principle for selections where order does not matter. For further background on combinations and binomial coefficients, see NIST's mathematics resources and the overview of combinations.

QUESTION NO: 14

A teacher prepares a test. She gives 5 objective type questions out of which 4 have to be answered. Find the total ways in which they can be answered if the first 2 questions have 3 choices and the last 3 have 4 choices.

A. 255

B. 816

C. 192

D. 100

E. 144

ANSWER: B

Explanation:

816 is correct because a student must answer exactly four of the five questions, so one question is omitted. Count the possible answer patterns according to the type of question omitted. If one of the first two questions is omitted, there are two possible questions to leave out. The remaining first-group question has 3 choices, and each of the three last questions has 4 choices. This gives $2 \times 3 \times 4^3 = 384$ ways.

If one of the last three questions is omitted, there are three possible questions to leave out. Both of the first two questions are answered, giving 3^2 choice patterns, while the two remaining last-group questions give 4^2 patterns. This gives $3 \times 3^2 \times 4^2 = 432$ ways. These cases are mutually exclusive because exactly one question is omitted, so their totals can be added: $384 + 432 = 816$. This uses the multiplication principle for independent selections and the addition principle for distinct cases. See OpenStax: The Counting Principle and Math Is Fun: Combinations and Permutations.

QUESTION NO: 15

A polygon has 20 diagonals. How many sides does it have?

A. 12

B. 11

C. 10

D. 9

E. 8

ANSWER: E

Explanation:

The correct answer is **8**. For a polygon with n sides, the number of diagonals is given by the formula $n(n - 3) \div 2$. This works because each vertex can connect by a diagonal to every non-adjacent vertex: it cannot connect to itself or to either of its two neighboring vertices. Counting from all vertices counts every diagonal twice, once from each endpoint, so the result is divided by two.

Set the formula equal to 20: $n(n - 3) \div 2 = 20$. Multiplying by two gives $n(n - 3) = 40$, or $n^2 - 3n - 40 = 0$. Factoring produces $(n - 8)(n + 5) = 0$. A polygon must have a positive number of sides, so $n = 8$. An eight-sided polygon, called an octagon, therefore has 20 diagonals. The standard diagonal-count formula is also described by Wolfram MathWorld and illustrated in Math Is Fun's polygon diagonals guide.

QUESTION NO: 16

At the time Jane Austen's novels were published – between 1811 and 1818 – English literature was not part of any academic curriculum. In addition, fiction was under strenuous attack. Certain religious and political groups felt novels had the power to make so called immoral characters so interesting young readers would identify with them; these groups also considered novels to be of little practical use. Even Cole-ridge, certainly no literary reactionary, spoke for many when he asserted that "novel-reading occasions the destruction of the mind's power".

These attitudes towards novels help explain why Austen received little attention from early nineteenth century literary critics. (In any case, a novelist published anonymously, as Austin was, would not be likely to receive much critical attention). The literary response that was accorded her, however, was often as incisive as twentieth century criticism. In his attack in 1816 on novelistic portrayals "outside of ordinary experience, "for example, Scott made an insightful remarks about the merits of Austen's fiction. Her novels, wrote Scott, "present to the reader an accurate and exact. picture of ordinary everyday people and places, reminiscent of seventeenth –century Flemish painting. "Scott did not use the word "realistic probability in judging novels. The critic whitely did not use the word realism either, but he expressed agreement with Scott's evaluation, and went on to suggest the possibilities for moral instruction in what we have called Austen's realistic method. Her characters, wrote whitely, are persuasive agents for moral truth since they are ordinary persons "so clearly evoked that was feel an interest in their fate as if it were our own" Moral instruction, explained Whitely, is more likely to be effective when conveyed through

recognizably human and interesting characters then when imparted by a sermonizing narrator. Whately especially praised Austen's ability to create characters who "mingle goodness and villainy, weakness and virtue, as in life they are always mingled. "Whately concluded his remarks by comparing Austen's art of characterization to Sicken's, stating his preference for Austin's. often anticipated the reservations of twentieth-century critics. An example of such a response was Lewes' complaint in 1859 that Austen's range of subjects and characters was too narrow. Praising her verisimilitude, Lewes added that nonetheless her focus was too often upon only the unlofty and the common place. (Twentiethcentury Marxists, on the other hand, were to complain about what they saw as her exclusive emphasis on a lofty upper-middle class) in any case, having been rescued by some literary critics from neglect and indeed gradually lionized by them, Austen's steadily reached, by the mid-nineteenth century, the enviable pinnacle of being considered controversial.

The author quotes Coleridge in order to

A. refute the literary opinions of certain religious and political groups

B. make a case for the inferiority of novels to poetry

C. give an example of a writer who was not a literary reactionary

D. illustrate the early nineteenth-century belief that fiction was especially appealing to young readers

E. indicate how widespread was the attack on novels in the early nineteenth century

ANSWER: E

Explanation:

The correct answer is *indicate how widespread was the attack on novels in the early nineteenth century*. The passage first describes opposition to fiction from "certain religious and political groups," whose objections include the supposed moral danger and impracticality of novel reading. It then introduces Coleridge with the significant qualification that he was "certainly no literary reactionary." By citing a severe statement from someone not ordinarily associated with socially or artistically conservative views, the author broadens the evidence: hostility to novels was not confined to the particular religious and political groups already mentioned. Coleridge's assertion that novel reading could destroy mental power demonstrates that criticism of fiction extended into wider intellectual and literary circles. The phrase "spoke for many" makes this purpose explicit, presenting his view as representative of a substantial contemporary attitude rather than as an isolated opinion. This context also supports the following point that Austen initially received limited critical attention: pervasive distrust of novels helped shape the literary environment in which her works appeared. For background on Coleridge's literary career and influence, see Encyclopaedia Britannica's biography of Samuel Taylor Coleridge. For an overview of Austen's publication history and reception, see the Jane Austen Society of North America.

QUESTION NO: 17

If the flag of Tagore House has to be a sequence of three blocks of different colours, then how many flags can they choose from?

A. 9

B. 27

C. 60

D. 20

E. 15

ANSWER: C

Explanation:

60 is correct when Tagore House is choosing from the five available colours implied by the question set. Because the flag consists of three blocks in a sequence, the position of each colour matters: a red–blue–green arrangement is a different flag from a blue–red–green arrangement. The blocks must also have different colours, so no colour can be repeated. There are five choices for the first block, then four remaining choices for the second block, and three remaining choices for the third block. Applying the multiplication principle gives 5 × 4 × 3 = 60 possible flags. Equivalently, this is the number of

permutations of three colours selected from five, written as 5P3 = 5!/(5 − 3)! = 60. This use of ordered arrangements without repetition is explained in Khan Academy's introduction to permutations and in Britannica's overview of permutations and combinations.

QUESTION NO: 18

There are 12 children in a party. For a game they have to be paired up. How many different pairs can be made for the game?

A. 46

B. 24

C. 120

D. 66

E. 132

ANSWER: D

Explanation:

The correct answer is **66**. A pair consists of two children selected from the group of 12. Since the order within a pair does not matter, choosing one particular child first and another second describes the same pair as choosing those two children in the reverse order. Therefore, this is a combinations calculation rather than a permutation calculation.

The number of ways to choose 2 children from 12 is calculated as *12 choose 2*: 12 × 11 ÷ 2 = 66. The division by 2 removes the duplicate ordering of each pair. For example, a pair containing Child 1 and Child 2 is counted only once, not once as "Child 1 with Child 2" and again as "Child 2 with Child 1." Thus, there are 66 distinct possible two-child pairs that can be formed from the party. This use of combinations for selections where order is irrelevant is described in OpenStax Contemporary Mathematics: Combinations and Combination.

QUESTION NO: 19

In strongly territorial birds such as the indigo bunting, song is the main mechanism for securing g, defining, and defending an adequate breeding are. When population density is high, only the strongest males can retain a suitable area. The weakest males do not breed or are forced to nest on poor or marginal territories.

During the breeding season, the male indigo bunting sings in his territory; each song lasts two or three seconds with a very short pause between songs, Melodic and rhythmic characteristics are produced by rapid changes in sound frequency and some regularity of silent periods between sounds. These modulated sounds form recognizable units, called figures, each of which is reproduced again and again with remarkable consistency. Despite the large frequency range of these sounds and the rapid frequency changes that the birds makes, the n umber of figures is very limited. Further, although we found some unique figures in different geographical populations, more than 90 percent of all Indigo bunting figures are extremely stable on the geographic basis . In our studies of isolated buntings we found that male indigo buntings are capable of singing many more types of figures than they usually do. Thus, it would seem that they copy their figures from other buntings they hear signing.

Realizing that the ability to distinguish the songs of one species from those of another could be an important factor in the volition of the figures, we tested species recognition of a song. When we played a tape recording of a lazuli bunting or a painted bunting, male indigo bunting did not respond; Even when a dummy of male indigo bunting was placed near the tape recorder. Playing an indigo bunting song, however, usually brought an immediate response, making it clear that a male indigo bunting can readily distinguished songs of its own species from those of other species.

The role of the songs figures in interspecies recognition was then examined. We created experimental songs composed of new figures by playing a normal song backwards, which changed the detailed forms of the figures without altering frequency ranges or gross temporal features. Since the male indigos gave almost a full response to the backward song, we concluded that a wide range of figures shapes can evoke positive responses. It seems likely, therefore, that a specific configuration is not essential for interspecies recognition, but it is clear that song figures must confirm to a particular frequency range, must be within narrow limits of duration, and must be spaced at particular intervals.

There is evident that new figures may arise within a population through a slow process of change and selection. This variety is probably a valuable adaptation for survival: if every bird sang only a few types of figures, in dense woods or underbrush a female might have difficulty recognizing her mate's song and a male might not be able to distinguished a neighbor from a stranger. Our studies led us to conclude that there must be a balance between song stability and conservatism, which lead to clear-cut species recognition, and song variation, which leads to individual recognition.

The primary purpose of passage is to

A. raise new issues

B. explain an enigma

C. refute misconceptions

D. reconcile differing theories

E. analyze a phenomenon

ANSWER: E

Explanation:

The primary purpose is to **analyze a phenomenon**: the passage investigates how indigo bunting song figures are learned, structured, recognized, and maintained within populations. Rather than merely describing territorial singing, the author develops an evidence-based account of the relationship between song characteristics and recognition. The discussion moves from observations that figures are highly stable yet that isolated males can produce many more figures, to experiments testing responses to recordings of different species and to altered, backward versions of indigo bunting songs. Those experiments identify which broad acoustic features—such as frequency range, duration, and spacing—permit species recognition even when the precise shape of a figure changes.

The final paragraph extends the analysis to the adaptive value of variation. It explains why songs need enough stability to identify members of the same species, while also retaining enough variation for birds to distinguish mates, neighbors, and strangers. This focus on observations, experimental tests, and an evolutionary interpretation is characteristic of an analysis of a biological and behavioral phenomenon. Indigo buntings are known for complex learned songs and territorial breeding behavior, context that is summarized by the Cornell Lab of Ornithology's Indigo Bunting guide. More broadly, bird vocalizations can serve communication and recognition functions, as described by Encyclopaedia Britannica's overview of birdsong.

QUESTION NO: 20

At the time Jane Austen's novels were published – between 1811 and 1818 – English literature was not part of any academic curriculum. In addition, fiction was under strenuous attack. Certain religious and political groups felt novels had the power to make so called immoral characters so interesting young readers would identify with them; these groups also considered novels to be of little practical use. Even Cole-ridge, certainly no literary reactionary, spoke for many when he asserted that "novel-reading occasions the destruction of the mind's power".

These attitudes towards novels help explain why Austen received little attention from early nineteenth century literary critics. (In any case, a novelist published anonymously, as Austin was, would not be likely to receive much critical attention). The literary response that was accorded her, however, was often as incisive as twentieth century criticism. In his attack in 1816 on novelistic portrayals "outside of ordinary experience, "for example, Scott made an insightful remarks about the merits of Austen's fiction. Her novels, wrote Scott, "present to the reader an accurate and exact. picture of ordinary everyday people and places, reminiscent of seventeenth –century Flemish painting. "Scott did not use the word "realistic probability in judging novels. The critic whitely did not use the word realism either, but he expressed agreement with Scott's evaluation, and went on to suggest the possibilities for moral instruction in what we have called Austen's realistic method. Her characters, wrote whitely, are persuasive agents for moral truth since they are ordinary persons "so clearly evoked that was feel an interest in their fate as if it were our own" Moral instruction, explained Whitely, is more likely to be effective when conveyed through recognizably human and interesting characters then when imparted by a sermonizing narrator. Whately especially praised Austen's ability to create characters who "mingle goodness and villainy, weakness and virtue, as in life they are always mingled. "Whately concluded his remarks by comparing Austen's art of characterization to Sicken's, stating his preference for Austin's. often anticipated the reservations of twentieth-century critics. An example of such a response was Lewes' complaint in 1859 that Austen's range of subjects and characters was too narrow. Praising her verisimilitude, Lewes added that nonetheless her focus was too often upon only the unlofty and the common place. (Twentiethcentury Marxists, on the other hand, were to complain about what they saw as her exclusive emphasis on a lofty upper-middle class) in any case,

having been rescued by some literary critics from neglect and indeed gradually lionized by them, Austen's steadily reached, by the mid-nineteenth century, the enviable pinnacle of being considered controversial.

The author would most likely agree that which of the following options the best measure of a writer's literary success?

A. inclusion of the writer's work in an academic curriculum

B. Publication of the writer's work in the writer's own name

C. Existence of debate among critics about the writers work

D. Praise of the writers work by religious and political groups

E. Ability of the writers work to appeal to ordinary people.

ANSWER: C

Explanation:

The existence of debate among critics about the writers work is the best measure of literary success according to the passage's logic. The author traces Austen's movement from early neglect to sustained, varied critical attention. Critics find her work worthy of close analysis: Scott values its exact depiction of ordinary life, Whately identifies its moral force and nuanced characterization, and Lewes praises its verisimilitude while challenging the narrowness of its range. Later Marxist criticism introduces a further, different line of argument. This accumulation of praise, qualification, and disagreement shows that Austen's fiction has become an important object of literary judgment rather than a work simply ignored or dismissed. Most decisively, the passage calls the status of being "considered controversial" an "enviable pinnacle." That wording makes controversy a sign that a writer's work has entered an active, consequential critical conversation. Literary success here therefore means enduring enough to provoke serious competing evaluations, not merely receiving a single kind of approval. Austen's historical reputation and the ongoing scholarly interest in her fiction are also documented by the Encyclopaedia Britannica biography of Jane Austen and the Jane Austen Society of North America.

QUESTION NO: 21

The fossil remain of the first flying vertebrates, the pterosaurs, have intrigued paleontologists for more than two centuries. How such large creatures, which weighed in some cases as much as a piloted hangglider and had wingspans from 8 to 12 meters, solved the problems of powered flight, and exactly what these creatures werereptiles or birds- are among the questions scientist have puzzled over.

Perhaps the least controversial assertion about the pterosaurs is that they were reptiles. Their skulls, pelvises, and hind feet are reptilian. The anatomy of their wings suggests that they did not evolve into the class of birds.

In pterosaurs a greatly elongated fourth finger of each forelimb supported a wing like membrane. The other fingers were short and reptilian, with sharp claws, in birds the second finger is the principle strut of the wing, which consists primarily of features. If the pterosaur walked or remained stationary, the fourth finger, and with it the wing, could only turn upward in an extended inverted V-shape along side of the animal's body.

The pterosaurs resembled both birds and bats in their overall structure and proportions. This is not surprising because the design of any flying vertebrate is subject to aerodynamic constraints. Both the pterosaurs and the birds have hollow bones, a feature that represents a saving in weight. In the birds, however, these bones are reinforced more massively by internal struts.

Although scales typically cover reptiles, the pterosaurs probably had hairy coats. T.H. Huxley reasoned that flying vertebrates must have been warm – blooded because flying implies a high internal temperature. Huxley speculated that a coat of hair would insulate against loss of body heat and might streamline the body to reduce drag in flight. The recent discovery of a pterosaur specimen covered in long, dense, and relatively thick hair like fossil material was the first clear evidenced that his reasoning was correct.

Efforts to explain how the pterosaurs became air-borne have led to suggestions that they launched themselves by jumping from cliffs, by dropping from trees, or even by rising into light winds from the crests of waves. Each hypothesis has its difficulties. The first wrongly assumes that the pterosaur's hind feet resembled a bat's and could served as hooks by which the animal could bang in preparation for flight. The second hypothesis seems unlikely because large pterosaurs could not have landed in trees without damaging their wings. The birds calls for high waves to channels updrafts. The wind that made such waves however, might have been too strong for the pterosaurs to control their flight once airborne.

It can be inferred from the passage that some scientists believe that pterosaurs.

A. lived near large bodies of water

B. had sharp teeth for tearing food

C. were attacked and eaten by larger reptiles

D. had longer tails than many birds

E. consumed twice their weight daily to maintain their body temperature

ANSWER: A

Explanation:

“lived near large bodies of water” is the best inference because one proposed explanation for pterosaurs becoming airborne involves the animals rising into light winds from the crests of waves. Waves of the scale discussed in the passage occur on substantial bodies of water, and this proposed takeoff method would require a pterosaur to be close enough to such water to use the updrafts created by the waves. The passage does not present this as an established fact about every pterosaur; rather, it identifies it as one of several hypotheses scientists developed to account for how these large flying reptiles could take off. Therefore, the question’s wording—asking what *some scientists believe*—is important. The inference follows from the scientific proposal itself, even though the passage later notes practical difficulties with that proposal, including winds that might have made flight hard to control. Pterosaurs were flying reptiles with highly specialized wing anatomy, a broad overview supported by the Encyclopaedia Britannica overview of pterosaurs and the University of California Museum of Paleontology’s pterosaur resource.

QUESTION NO: 22

A bag contains 50 tickets numbered 51, 52,..., 100 of which 5 are drawn and arranged in ascending order of magnitude. Find the probability that the third number is 80.

A. 551/312500

B. 551/15134

C. 340/15134

D. 3364/312500

E. 30856/3125000

ANSWER: B

Explanation:

The correct probability is **551/15134**. For 80 to be the third number after the five distinct tickets are arranged in ascending order, exactly two selected tickets must be smaller than 80 and exactly two must be greater than 80. Among the tickets numbered 51 through 100, there are 29 tickets smaller than 80 (51 through 79) and 20 tickets greater than 80 (81 through 100). Thus, the number of favourable selections is $\binom{29}{2}\binom{20}{2}$: choose two lower tickets and two higher tickets, with 80 included as the remaining ticket. Every unordered selection of five tickets is equally likely, and the total number of possible selections is $\binom{50}{5}$. Therefore, the probability is $\frac{\binom{29}{2}\binom{20}{2}}{\binom{50}{5}}=\frac{406\times190}{2,118,760}=\frac{77,140}{2,118,760}=\frac{551}{15,134}$. This uses the standard combinations approach for selections where order of drawing is irrelevant; the subsequent ascending arrangement only identifies the median, or third-smallest, selected value. See OpenStax: Outcomes and Theoretical Probability and Combination formula reference.

QUESTION NO: 23

The discoveries of the white dwarf, the neutron star, and the black hole, coming well after the discovery of the red giant are among eh most exciting developments in decades because they may be well present physicists with their greatest challenge

since the failure of classical mechanics. In the life cycle of the star, after all of the hydrogen and helium fuel has been burned, the delicate balance between the outer nuclear radiations. Pressure and the stable gravitational force becomes disturbed and slow contraction begins. As compression increases, a very dense plasma forms. If the initial star had mass of less than 1.4 solar masses (1.4 times the mass of our sun), the process ceases at the density of 1,000 tons per cubic inch, and the star becomes the white dwarf. However, if the star was originally more massive, the white dwarf plasma can't resist the gravitations pressures, and in rapid collapse, all nuclei of the star are converted to a gas of free neutrons. Gravitational attraction compresses this neutron gas rapidly until a density of 10 tons per cubic inch is reached; at this point the strong nuclear force resists further contraction. If the mass of the star was between 1.4 and a few solar masses, the process stops here, and we have a neutron star. But if the original star was more massive than a few solar masses, even the strong nuclear forces cannot resist the gravitational brunch. The neutrons are forced into one another to form heavier hadrons and these in turn coalesce to form heavier entities, of which we as yet know nothing. At this point, a complete collapse of the stellar mass occurs; existing theories predict a collapse to infinite density and infinitely small dimensions Well before this, however, the surface gravitational force would become so strong that no signal could ever leave the star - any photon emitted would fall back under gravitational attraction – and the star would become black hole in space. This gravitational collapse poses a fundamental challenge to physics. When the most widely accepted theories predict such improbable things as infinite density and infinitely small dimensions, it simply means that we are missing some vital insight. This last happened in physics in the 1930's, when we faced the fundamental paradox concerning atomic structure. At that time, it was recognized that electrons moved in table orbits about nuclei in atoms. However, it was also recognized that if charge is accelerated, as it must be to remain in orbit, it radiates energy; so, theoretically, the electron would be expected eventually to spiral into the nucleus and destroy the atom. Studies centered around this paradox led to the development of quantum mechanics. It may well be that an equivalent t advance awaits us in investigating the theoretical problems presented by the phenomenon of gravitational collapse.

The author introduces the discussion of the paradox concerning atomic structures in order to

A. Show why it was necessary to develop quantum mechanics

B. Compare the structure of an atom with the structure of star

C. Demonstrate by analogy that a vital insight in astrophysics is missing

D. illustrate the contention that improbable things do happen in astrophysics

E. Argue that atoms can collapse if their electrons do not remain in orbit.

ANSWER: C

Explanation:

"Demonstrate by analogy that a vital insight in astrophysics is missing" is correct because the atomic-structure discussion supplies a historical parallel for the problem posed by gravitational collapse. The passage says that, in the 1930s, accepted physical ideas created a paradox: orbiting electrons should radiate energy and fall into the nucleus, even though atoms plainly persist. Investigating that contradiction led to a major new insight—quantum mechanics. The author then directly compares that earlier situation with current theories of extreme stellar collapse, whose predictions of infinite density and infinitesimal dimensions indicate that existing theory is incomplete. Thus, the atom example is not presented chiefly as a lesson about atomic structure itself; it establishes a pattern in the history of physics: an apparent theoretical impossibility can reveal that a fundamental conceptual advance is needed. By drawing that analogy, the author supports the expectation that research on black holes and gravitational collapse may likewise produce an advance equivalent in importance to quantum mechanics. Background on the role of quantum mechanics in explaining atomic-scale phenomena is available from Encyclopaedia Britannica; context on gravitational collapse and black holes is available from NASA Science.

QUESTION NO: 24

How many ways can five rings be worn in 3 fingers?

A. 81

B. 625

C. 15

D. 243

E. 125

ANSWER: D

Explanation:

There are **243** ways to wear the five rings on three fingers when each ring is treated as a distinct ring and each may be placed independently on any one of the three fingers. For the first ring, there are three possible finger choices. The same three choices are available for the second ring, and this continues independently for every remaining ring. By the multiplication (product) rule, the total number of assignments is therefore $3 \times 3 \times 3 \times 3 \times 3$, or 3^5. This equals 243.

This interpretation allows more than one ring to be worn on the same finger, which is the standard assumption unless the question states that each finger can hold only one ring or imposes an ordering requirement on rings placed on the same finger. The calculation counts every complete assignment of the five individual rings to the available fingers exactly once. The product rule is used when a process consists of successive choices and the total number of outcomes is obtained by multiplying the number of choices at each step. See OpenStax: The Multiplication Principle and Rule of product.