Quiz Date: 5ᵗʰ October 2020

Direction (1-10): Read the following passage carefully and answer the questions given below it. Certain words are given in bold to help you locate them while answering some of the questions

Do you know that 'APSARA' was the name that Jawaharlal Nehru chose for India's first nuclear reactor? Or, that he also named the country's first computer, TIFRAC or Tata Institute of Fundamental Research Automatic Calculator? The APSARA and TIFRAC design teams were working together and interacting regularly. There was an excitement when all the subunits – viz. the arithmetic, memory, control, and display units – operated in synchrony, and the first program could be run on the system. "It was a small machine language program **cumulatively** adding one number to another; it looped a number of times and stopped after a specified number of cycles. To the design team, the first Indian computer running a 'stored program' was as much a milestone as the first Indian reactor sustaining a chain reaction of nuclear fission! The pilot model of the computer, completed in 1956, was a parallel, asynchronous, fixed point, and single address machine with a word length of 12 bits and a two-dimensional ferrite core memory of 256 words, the essay by S. Ramani informs. "Input and output were **accomplished** via paper tape and teletype. The total power consumption of this machine was about 10 kw."

An important component of the TIFRAC was an 'intangible' item named its assembler, designed and implemented by R. Narasimhan and Kamalakar S. Kane, recounts S. Ramani in his essay. It was almost certainly the first item of system software to be implemented in India, he notes. A **snatch** of information of use to novices is that, as against an application program which has specific uses, system software is an essential part of a computer system that is necessary to implement the very complex functionality that computer systems need to provide. As Ramani elaborates, the TIFR computer group had recognized in 1959-60 the importance of software. "This was a time when the term 'computer software' meant nothing to anyone outside a small community of specialists in the world." Another essay, authored by S. R. Vijayakar and Y. S. Mayya , traces the birth of TDC12, 'the first Indian-built electronic digital computer' commissioned by Vikram Sarabhai at Bhabha Atomic Research Centre on January 21, 1969.TDC stood for Trombay Digital Computer series of ECIL (Electronics Corporation of India Ltd), and the computer was the result of the work of "a small band of young engineers and scientists, fresh from the colleges, without any previous knowledge of computers or guidance from people with hands-on experience in the field… Their only inputs were the trust and confidence that their superiors reposed in them.

A predecessor to TDC12 was EAC (Electronic Analogue Computer) machine in 1964. About ten of these computers were sold to various engineering colleges in the country! "One of the very interesting applications for which this computer was put to use was the design of the flyover bridge at Kemps Corner, Mumbai, in association with Roorkee and Osmania universities. The system was also employed for the simulation of control systems of CIRUS reactor."

A differently-titled essay is of Bud Mishra titled,'SarveSantuNiramaya' (meaning, 'May all be disease-free'). He is of the view that the emerging fields of computational systems biology and population genomics analysis could be the next important high-technology areas for India to **nurture**. India's ambition, he says, should be to continue developing technologies with the goal of establishing herself as a global superpower and a world leader, not necessarily in a military sense or even in an economic sense, but as an example representing the ambitions of all humanity and having its fount embedded in knowledge, science, and technology – all aimed to end human suffering. The investment in biotechnology, nanotechnology, robotics, etc. would be the necessary steps in moving India in that direction, explains Mishra.

Q1.Which of the following statements is true about the 1956's pilot model of the computer?
(a)A parallel, synchronous, fixed point, and single address machine with a word length of 12 bits and a two-dimensional ferrite core memory of 256 words.
(b)A parallel, asynchronous, fixed point, and single address machine with a word length of 32 bits and a two-dimensional ferrite core memory of 256 words.
(c)A parallel, asynchronous, fixed point, and single address machine with a word length of 32 bits and a single-dimensional ferrite core memory of 256 words.
(d)A parallel, asynchronous, fixed point,and single address machine with a word length of 12 bits and a two-dimensional ferrite core memory of 256 words.
(e) None of these.

Q2.How is system software useful for a computer system according to the context of the passage?
(a) Provides default medium for video distribution.
(b) Simulation of control systems.
(c)It implements the very complex functionality that computer systems need to provide.
(d) Acts as a memory medium within a device.
(e) Makes the bus speeds higher better.

Q3.In reference to the writings by some of the authors, which is the first Indian built electronic digital computer?
(a)EAC
(b)TIFRAC
(c)TDC12
(d)APSARA
(e)CIRUS

Q4.The formation of TDC12 was the outcome of
(a)A person skilled in the technique of an art or craft.
(b)An IT Specialist, computer professional, or an IT professional especially a person who has proven extensive knowledge in the area of computing.
(c) Experienced engineers and scientists.
(d) A small band of young fresh college engineers and scientists without any previous knowledge of computers.
(e) An expert in the practical application of a science.

Q5. Apart from the designing of Flyover Bridge at Kemps Corner, what was the other important application of EAC?
(a) Displaying the time, the zodiac, and the orbits of the sun and moon.
(b) Simulation of control systems of CIRUS reactor.
(c) Integrating a voltage with respect to time.
(d) Carrying bits of information in groups by means of spatial arrangement of signals.
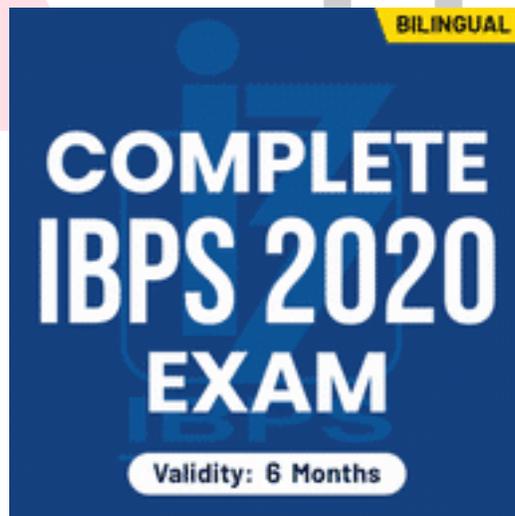(e) All of these.

Q6.What are thenext important high-technology areas mentioned in the passage where India could nurture?
(a) Computer software development to next level.
(b) Computational systems biology.
(c) Population genomics analysis
(d) Both (a) and (b)
(e) Both (b) and (c)

Directions (7-8):Find out the word from the given options which is similar in meaning to the word given in bold in the passage.

Q7.**Cumulatively**
(a)Segregated
(b)Collectively
(c)Distinctly
(d)Isolated
(e)Disassociated

Q8.**Accomplished**
(a)Incapable
(b)Inept
(c)Attained
(d)Unorganized
(e)Barbaric

Directions (9-10):Find out the word from the given options which is opposite in meaning to the word given in bold in the passage.

Q9.**Nurture**
(a)Foster
(b)Deprive
(c)Nourish
(d)Feed
(e)Develop

Q10.**Snatch**
(a)Grab
(b)Seize
(c)Immersed
(d)Release
(e)Rooted

Directions (11-15): In each of the following sentences there are two blank spaces. Below each sentence there are five pairs of words denoted by numbers (a), (b), (c) ,(d) and (e). Find out which pair of words can be filled up in the blanks in the sentence in the same sequence to make the sentence grammatically correct and meaningfully complete.

Q11. Leisure must be spent carefully and _____ only, otherwise the devil will take the _____ of you.
(a) positively, care
(b) constructively, better
(c) pro-actively, though
(d) objectively, energy
(e) purposefully, measure

Q12. Nothing is impossible in the world of politics. States which were _____ foes and had their deadly missiles pointed at each other find themselves _____ in military alliances.
(a) implacable, partners
(b) intense, joining
(c) deadly, approaching
(d) known, soliciting
(e) enviable, grouping

Q13. Inferring attitudes from expressed opinion has many_____. People may_____ their attitude and express socially acceptable opinions.
(a) limitations, conceal
(b) advantages, show
(c) drawbacks, support
(d) benefits, avoid

(e) reasons, acknowledge

Q14. We should move towards a system where the banks can_____ capital in the market

with _____ safeguard so that they continue to be public sector banks.
(a) improve, proper
(b) strengthen, durable
(c) raise, adequate
(d) stimulate, effective
(e) provide, delicate

Q15.
Governments in India seem to delight in arbitrary censorship under the _____ of _____
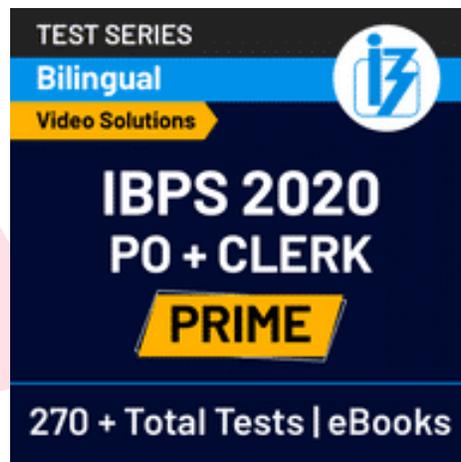   the public.
(a) garb, upholding
(b)pretext, protecting
(c) context, strengthening
(d) command, authorising
(e) guise, winning

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S1.Ans. (d)
Sol. Refer to paragraph 1 which mentions about the first Indian computer running a stored program and thus mentions about the pilot model of the computer completed in 1956 which was "a parallel, asynchronous, fixed point, and single address machine with a word length of 12 bits and a two-dimensional ferrite core memory of 256 words".

S2. Ans. (c)
Sol. Option (c) is the most appropriate choice. The answer can be deduced from the second paragraph of the passage where it is given that an application program has specific uses but against it *system software is an essential part of a computer system that is necessary to implement the very complex functionality that computer systems need to provide.*

S3. Ans. (c)

Sol. The answer can be traced from the second paragraph of the passage itself where it is given "Another essay, authored by S. R. Vijayakar and Y. S. Mayya , traces the birth of TDC12, 'the first Indian-built electronic digital computer' commissioned by Vikram Sarabhai at Bhabha Atomic Research Centre on January 21, 1969."

S4. Ans. (d)
Sol. Refer to some of the last lines of the second paragraph where it is mentioned that *TDC stood for Trombay Digital Computer series of ECIL (Electronics Corporation of India Ltd), and the computer was the result of the work of "a small band of young engineers and scientists, fresh from the colleges, without any previous knowledge of computers or guidance from people with hands-on experience in the field. Their only inputs were the trust and confidence that their superiors reposed in them.*

S5. Ans.(b)
Sol. Option (b) is the most suitable choice as it is mentioned in the passage. We can refer to paragraph 3 for deducing our answer as the answer is explicitly given. So the text can be quoted directly as, "The system was employed for the simulation of control systems of CIRUS reactor."

S6. Ans. (e)
Sol. Option (e) is the most appropriate answer. The answer can be inferred from the last paragraph of the passage where it is given that Bud Mishra is of the view that the *emerging fields of computational systems biology and population genomics analysis could be the next important high-technology areas for India to nurture.*

S7. Ans.(b)
Sol. Cumulatively means in a way that increases in quantity, degree, or force by successive additions.
Collectively means taken as a whole; in combination.
Distinctly means taken as a whole; in combination.
Isolated means far away from other places, buildings, or people; remote.
Segregated means set apart from the rest or from each other; isolate or divide.
Disassociated means disconnected.

S8. Ans.(c)
Sol. Accomplished means achieve or complete successfully
Attained-succeed in achieving (something that one has worked for)
Inept means having or showing no skill; clumsy.
Barbaric means savagely cruel or uncivilized and uncultured.
Thus option (c) is the answer.

S9. Ans. (b)
Sol. Option (b) is the most suitable choice. Nurture means care for and protect (someone or something) while they are growing.
Deprive means prevent (a person or place) from having or using something.
Hence it is the only opposite of the given word.

Foster means encourage the development of (something, especially something desirable. Nourish means provide with the food or other substances necessary for growth, health, and good condition.

S10. Ans.(d)
Sol. Option (d) is the most apt choice.
Snatch-quickly seize (something) in a rude or eager way
Immersed means involve oneself deeply in a particular activity.
Rooted means establish deeply and firmly.
Option (a)and (b) are the synonyms of the given word.

S11.Ans.(b)
Sol.
 'constructively, better' fits the sentence most appropriately where 'constructively' means promoting further development or advancement.

S12.Ans.(a)
Sol.
 'implacable, partners'fits the sentence most appropriately where 'implacable' means unable to be appeased.

S13.Ans.(a)
Sol.
'limitations, conceal' fits the sentence appropriately where 'conceal' means prevent (something) from being known.

S14.Ans.(c)
Sol.
 'raise, adequate' fits the sentence appropriately where adequate means satisfactory or acceptable in quality or quantity.

S15.Ans.(b)
Sol.
 'pretext, protecting' fits the sentence appropriately as 'pretext' means a reason given in justification of a course of action that is not the real reason.
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