

**GOVT. MADHAV SCIENCE COLLEGE, UJJAIN M.P.**

**A GRADE ACCREDITED THROUGH NAAC  
DST-FIST COLLEGE**



### **Self-Declaration**

This is certified that Govt. Madhav Science College Ujjain affiliated to Vikram University Ujjain, Conducts Entry Level Behavior test to Judge the Entry Level behavior of students taking admission across various courses in different programmes.

Principal  
Govt. Madhav Science College Ujjain

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**Entry Level Behavior Test**

**Maximum Time 30 Minutes**

**Session 2019-2020**

**Chemistry Botany Zoology**

**Q1. The behaviour of a real gas approaches that of an ideal gas at?**

- a) Low temp and low pressure
- b) Low temp and high pressure
- c) High temp and low pressure
- d) High temp and high pressure

**Q2. Hydrogen bonding is absent in?**

- a)  $H_2S$
- b)  $H_2O$
- c)  $NH_3$
- d)  $C_2H_5OH$

**Q3. What is the effect of increasing temperature on an exothermic reaction?**

- a) Reaction rate will decrease
- b) Reaction rate will increase
- c) No effect of change of temperature
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**Q4. Which compound does not have centre of symmetry?**

- a) Trans -dichloro ethane
- b) Cis-dichloro ethane
- c) Benzene
- d) Para -dichloro benzene

**Q5. According to Baeyer's strain theory which of the follows is stable?**

- a) Cyclopropane
- b) Cyclobutene
- c) Cyclopentane
- d) Cyclohexane

**Botany**

1. प्रकाश संश्लेषण में ऑक्सीजन उत्पन्न करने वाले प्रथम जीव हैं (अ) विषाणु (ब) जीवाणु (स) सायनोबैक्टीरिया (द) एक्टिनोमायसीटीस

First organism with oxygenic photosynthesis were (a) Viruses (b) Bacteria (c) Cyanobacteria (d) Actinomycetes

2. लायकेन्स निम्न दो के मध्य सहजीवन का उदाहरण हैं?  
(अ) शैवाल एवं ब्रायोफायटा (ब) कवक एवं आवृत्तबीजी (स) शैवाल एवं कवक (द) कवक एवं ब्रायोफायटा

Lichens are symbiotic association between (a) Algae & Bryophytes (b) Fungi & Angiosperms (c) Algae & Fungi (d) Fungi & Bryophytes

3. हैन्स्टीन ने निम्न सिद्धांत प्रतिपादित किया (अ) शीर्ष कोशिका सिद्धांत (ब) ट्यूनिका कोर्पस सिद्धांत (स) हिस्टोजिन सिद्धांत (द) उपरोक्त में कोई नहीं

Hanstein proposed (a) Apical cell theory (b) Tunica corpus theory (c) Histogen theory (d) None of the above

4. कुकुरबिटेसी कुल के सदस्य निम्न प्रदर्शित करते हैं (अ) रेडियल संवहन पूल (ब) कोन्जॉइन्ट कोलैटरल क्लोज्ड संवहन पूल (स) बायकोलैटरल संवहन पूल (द) उपरोक्त में कोई नहीं

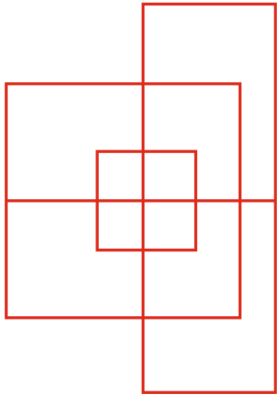
Members of Cucurbitaceae family show (a) Radial Vascular bundle (b) conjoint collateral closed Vascular bundle (c) Bicolateral vascular bundle (d) None of the above

5. कोर्टेक्स में उलटे संवहन पूल निम्न में मिलते हैं (अ) निकटेंथस (ब) बोर्हेविआ (स) एकायरेन्थस (द) बिग्रोनिया

Inverted cortical vascular bundles are found in (a) Nyctanthus (b) Boerhavia (c) Achyranthus (d) Bignonia

**Reasoning questions**

**1. Find the minimum number of straight lines required to make the given figure.**



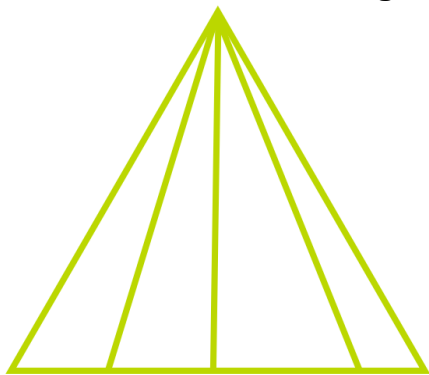
(A) 10

(B) 13

(C) 18

(D) 20

**10. Find the number of triangles in the given figure.**



(A) 8

(B) 10

(C) 15

## **English Comprehension**

Philosophy of Education is a label applied to the study of the purpose, process, nature and ideals of education. It can be considered a branch of both philosophy and education. Education can be defined as the teaching and learning of specific skills, and the imparting of knowledge, judgment and wisdom, and is something broader than the societal institution of education we often speak of.

Many educationalists consider it a weak and woolly field, too far removed from the practical applications of the real world to be useful. But philosophers dating back to Plato and the Ancient Greeks have given the area much thought and emphasis, and there is little doubt that their work has helped shape the practice of education over the millennia.

Plato is the earliest important educational thinker, and education is an essential element in "The Republic" (his most important work on philosophy and political theory, written around 360 B.C.). In it, he advocates some rather extreme methods: removing children from their mothers' care and raising them as wards of the state, and differentiating children suitable to the various castes, the highest receiving the most education, so that they could act as guardians of the city and care for the less able. He believed that education should be holistic, including facts, skills, physical discipline, music and art. Plato believed that talent and intelligence is not distributed genetically and thus is to be found in children born to all classes, although his proposed system of selective public education for an educated minority of the population does not really follow a democratic model.

Aristotle considered human nature, habit and reason to be equally important forces to be cultivated in education, the ultimate aim of which should be to produce good and virtuous citizens. He proposed that teachers lead their students systematically, and that repetition be used as a key tool to develop good habits, unlike Socrates' emphasis on questioning his listeners to bring out their own ideas. He emphasized the balancing of the theoretical and practical aspects of subjects taught, among which he explicitly mentions reading, writing, mathematics, music, physical education, literature, history, and a wide range of sciences, as well as play, which he also considered important.

During the Medieval period, the idea of Perennialism was first formulated by St. Thomas Aquinas in his work "De Magistro". Perennialism holds that one should teach those things deemed to be of everlasting importance to all people everywhere, namely principles and reasoning, not just facts (which are apt to change over time), and that one should teach first about people, not machines or techniques. It was originally religious in nature, and it was only much later that a theory of secular perennialism developed.

During the Renaissance, the French skeptic Michel de Montaigne (1533 - 1592) was one of the first to critically look at education. Unusually for his time, Montaigne was willing to question the conventional wisdom of the period, calling into question the whole edifice of the educational system, and the implicit assumption that university-educated philosophers were necessarily wiser than uneducated farm workers, for example.

**Q1.What is the difference between the approaches of Socrates and Aristotle?**

- 1)Aristotle felt the need for repetition to develop good habits in students; Socrates felt that students need to be constantly questioned
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- 3)There was no difference
- 4)Aristotle emphasized on the importance of paying attention to human nature; Socrates emphasized upon science

**Q2.Why do educationists consider philosophy a 'weak and woolly' field?**

- 1)It is not practically applicable
- 2)Its theoretical concepts are easily understood
- 3)It is irrelevant for education
- 4)None of the above

**Q3.What do you understand by the term 'Perennialism', in the context of the given comprehension passage?**

- 1)It refers to something which is of ceaseless importance
- 2)It refers to something which is quite unnecessary
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**Q4.Were Plato's beliefs about education democratic?**

- 1)He believed that only the rich have the right to acquire education
- 2)Yes
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**Q5.Why did Aquinas propose a model of education which did not lay much emphasis on facts?**

- 1)Facts are not important
- 2)Facts do not lead to holistic education
- 3)Facts change with the changing times
- 4)Facts are frozen in time

Hindi

प्रश्न 1 किसी एक का पल्लवन (विस्तार) कीजिए—

- 1 सपने वो होते हैं जो आपको नींद नहीं आने देते ।
- 2 वीर ही पृथ्वी का उपभोग करते हैं ।
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**CHEMISTRY MATHEMATICS PHYSICS**

**Chemistry**

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### Mathematics

**Question 1:** The eigen value of matrix  $A = \begin{bmatrix} -1 & 2 \\ 3 & 0 \end{bmatrix}$

आव्यूह  $A = \begin{bmatrix} -1 & 2 \\ 3 & 0 \end{bmatrix}$  के एक आइगेन मान है।

- a) 1 and 2
- b) 1 and -2
- c) -1 and 3
- d) none of these

**Question 2 :** If there is non zero minor of order  $r$  in matrix  $A$ , then

यदि मैट्रिक्स  $A$  में  $r$  क्रम का अशून्य उप सारणिक हो तब।

- a)  $\rho(A) = r$
- b)  $\rho(A) \leq r$
- c)  $\rho(A) \geq r$
- d)  $\rho(A) < r$

**Question 3 :** The curvature of the circle of radius  $r$  is

$r$  त्रिज्या के वृत्त की वक्रता है।

- a) 0
- b)  $r$
- c)  $r-1$
- d)  $2r$

**Question 4 :** If  $s = c \sec \psi$  then the value of  $\rho$  is

यदि  $s = c \sec \psi$  तब  $\rho$  का मान है।

- a)  $c \sec \psi$
- b)  $c \sec \psi \tan \psi$
- c) 0
- d) none of these

**Question 5 :** The value of  $\text{div } \vec{r}$  will be :  $\text{div } \vec{r}$  का मान होगा

- a) 1
- b) 0
- c) 2
- d)

## Physics

1 न्यूटन के नियम लागू होते हैं ?

अ घूर्णीय फ्रेम में                      ब जड़त्वीय फ्रेम में                      स अजड़त्वीय फ्रेम में                      द त्वरित फ्रेम में

The laws of Newton are applicable –

A in rotatory frame    b in inertial frame    c in non-inertial frame    D in accelerated frame

2 कांच की सतह पर पारे की बूंद नहीं फैलती है, क्योंकि कांच तथा पारे के बीच स्पर्श कोण है –

अ न्यून कोण                      ब अधिक कोण                      स  $0^\circ$                       द  $90^\circ$

mercury does not spread on glass because the angle of contact for glass- mercury is –

a acute                      b obtuse                      c  $0^\circ$                       D  $90^\circ$

3 निम्न में से वेक्टर राशि है—

अ क्षेत्रफल                      ब आयतन                      स लम्बाई                      द दाब

out of the following, vectore quantity is

a area                      b volume                      c length                      d pressure

4 यदि किसी गैस के अणुओं की वर्ग माध्य मूल चाल  $C_{rms}$ , सर्वाधिक प्रसम्भाव्य चाल  $C_m$  तथा माध्य चाल  $C_{av}$  है तो

अ  $C_{rms} = C_{av} = C_m$                       ब  $C_{rms} > C_{av} > C_m$                       स  $C_{rms} < C_{av} < C_m$                       द  $C_m > C_{rms} > C_{av}$

if the root mean square speed, most probable speed and average speed of a gas molecule are  $C_{rms}$ ,  $C_m$  and  $C_{av}$  respectively, than

a  $C_{rms} = C_{av} = C_m$                       b  $C_{rms} > C_{av} > C_m$                       c  $C_{rms} < C_{av} < C_m$                       d  $C_m > C_{rms} > C_{av}$

5 एक कार्नो इंजन की दक्षता  $1/6$  है ए जबकि स्रोत का ताप  $117^\circ C$  है 1 दक्षता  $1/3$  प्राप्त करने के लिए सिंक के ताप में कमी करनी होगी –

अ  $52^\circ C$                       ब  $60^\circ C$                       स  $62^\circ C$                       द  $65^\circ C$

The efficiency of a car not engine is  $\frac{1}{6}$  when the temperature of source is  $117^{\circ}\text{C}$ . to obtain the efficiency to  $\frac{1}{3}$ , the temperature of sink has to be reduced by .

a  $52^{\circ}\text{C}$

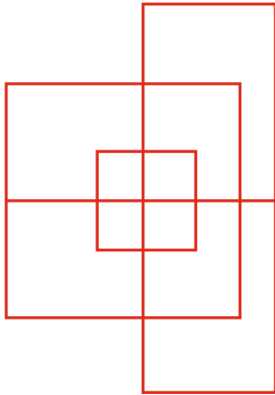
b  $60^{\circ}\text{C}$

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### Reasoning questions

1. Find the minimum number of straight lines required to make the given figure.



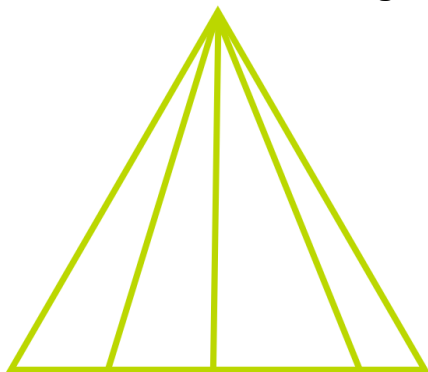
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10. Find the number of triangles in the given figure.



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- 1 सपने वो होते हैं जो आपको नींद नहीं आने देते ।
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**BCA Entry Level Behavior Test Paper**

**Maximum Time 30 Minutes**

**Session 2019-2020**

**BCA - 11 Fundamental of Computers and PC-Packages**

**1. UNIVAC is**

- A) Universal Automatic Computer
- B) Universal Array Computer
- C) Unique Automatic Computer
- D) Unvalued Automatic Computer

**2. The basic operations performed by a computer are**

- A) Arithmetic operation
- B) Logical operation
- C) Storage and relative
- D) All the above

**3. The two major types of computer chips are**

- A) External memory chip
- B) Primary memory chip
- C) Microprocessor chip
- D) Both b and c

**4. Microprocessors as switching devices are for which generation computers**

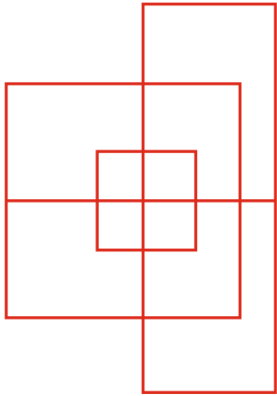
- A) First Generation
- B) Second Generation
- C) Third Generation
- D) Fourth Generation

**5. The brain of any computer system is**

- A) ALU
- B) Memory
- C) CPU
- D) Control unit

**Reasoning questions**

**1. Find the minimum number of straight lines required to make the given figure.**



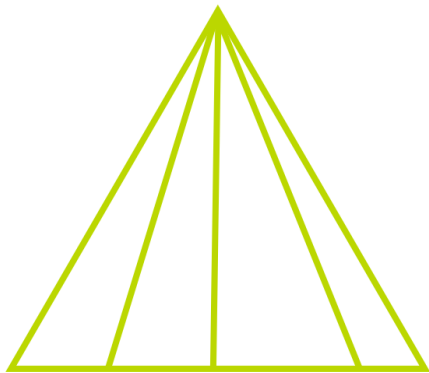
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