DELHI PUBLIC SCHOOL, BHILAI (C.G.)

DATE : 15-09-2016 **FIRST TERMINAL EXAMINATION, 2016** **Time : 3 Hours**

CLASS : XII **ENGLISH CORE** **M.M : 100**

No. of Printed Pages : 5

General Instructions :

1. This paper is divided into three sections : A,B and C. All the sections are compulsory.
2. Separate instructions are given with each section and question, wherever necessary. Read these instructions and follow them carefully.
3. Do not exceed the prescribed word limit while answering the questions.

SECTION A (READING) **30 Marks**

1. Read the passage given below and answer the questions that follow : **1×12=12**

1. The newest stress buster is paper yoga. Adults are now changing over from their smart phones to colouring books to beat anxiety and relax. They spend hours hunched over the drawing of mandalas filling in their words into the circle, with colours. These adult colouring books are classified in the adult category and are becoming fast selling items as people reach out to them to relax their minds. And it is not just mandala drawings that are in vogue. Others settle for elaborate landscapes, cultural tableaux, brimming with images of dancers, singers and concerts. Involutes of various shapes also make up this list.

2. Just as the demand has kept growing, there are also authors who are much in demand for their relaxing creations. Leading in this field is Johanna Basford ,who has sold 1.4 million copies of her books" Secret Garden" ,"Enchanted Forest" and "Lost Ocean",in a matter of just two years. More bookstores have now started stacking such books as customers are asking for them. Publishers now contend that it is not just celebrity authors in this category but any book with the tag –line 'de-stress' has a readymade market for it.

3. Another reason for the success of these books is that they are multilingual in the way that they speak to adults of all age groups cultures and dispositions. Even nursery teachers are fast becoming customers of these books not because they are overworked but because of the fun that even five year olds are having with their own colouring books.

4. The new trend has been dubbed 'Paper Yoga'. While the junior versions of these books hold simple generously proportioned patterns, that allow for a child's broad strokes, the adult variants typically have tight kaleidoscopes that require a fine pen and a staunch eye. As they do not require special skills to execute, publishers are marketing it with the tag-line that their target customer is anyone who can draw satisfaction from something beautiful. The skills of drawing and colouring or conceptualization, essentials for the art of drawing, are not in this list of requirements. Thus the phobia of being an expert or amateur is not a deterrent.

5. So far, publishers have had to import their stock as there are not sufficient titles available. But illustrators are fast catching up with this trend and some have even ventured into self – publishing in this line. Others are innovating still more meaningful inputs into this work by asking customers to bring their own experiences to the book.

6. Individual stories of success are making an appearance too. Illustrator Indu Harikumar started her self – published colouring book, 'Beauty Needs Space', on social media. She priced a copy of 12 artworks as ₹ 1500 and sold 155 of the 200 she had printed. 'People have written to say that they connected with the book as they worked on it.'

7. While adults are discovering their inner selves through this creative pursuit, art – based therapeutics warn against expecting too much from these books for saving lives or minds. At best, they calm the mind and are a temporary diversion, for the mind and cut off the noise of clamouring thoughts. These books they claim can offer therapeutic returns only when used in conjunction with a therapist's counsel. As yet the entire process in undergoing a testing time but whatever little of it has emerged, is being hailed as a step in the positive direction.

1.1 On the basis of your understanding of the above passage, answer the following questions with the help of the given options :

(a) Adult spend hours over their mandalas .....

(i) colouring them
(ii) filling in the words into them
(iii) filling in messages into them
(iv) writing their life history in them

(b) Joanna Basford's colouring books are called .....

(i) Basford Gardens, Secret gardens
(ii) Paper Yoga, Beauty Needs Space
(iii) Enchanted Forest, Paper Boats
(iv) Secret Garden, Enchanted Forest, Lost Ocean

(c) Indu Harikumar started her colouring book .....

(i) On the social media
(ii) in public spaces
(iii) in school classrooms
(iv) in international meets

(d) Colouring books can serve best if combined with .....

(i) a temporary diversion of the mind
(ii) working on social media
(iii) a therapist's counsel
(iv) a counsellor's advice

1.2 Answer the following questions briefly:

a) What is the newest stress buster and what does it use?
b) What topics distinguish adult colouring books?
c) Why are the publishers forced to import stock?
d) What is the latest trend in this line?
e) Who is the leading author in this field?
f) Trace the growth of Indu Harikumar in this line.

1.3 Find words from the passage which mean the same as :

(a) very complicated and detailed (para 1)
(b) A thing that discourages someone from doing something (para 4)

2. Read the following passage carefully **1×10=10**

1. Almost 3000 years of food evolution has taken place for the pizza pie to reach its current delicious state today. Although flat breads have been around for 6000 years , the word "pizziare" started appearing in Italian writings as far back as 1000 B.C. The word 'pizza' itself is believed to have originated from an old Italian word meaning "a point" ,which in turn became the Italian word "pizziare", which means to pinch or to pluck.

2. Tomatoes were first introduced to Italy from South America in 1522.At first the tomato was believed to be poisonous. Fortunately, the poorer peasants of the region finally overcame their doubts about tomatoes in the 17th century and began adding it to the bread dough, and the first pizzas were created.

3. Before the tomatoes arrived in the 1500s , the first pizzas in Naples were white, made with garlic ,olive oil. salt, anchovies and probably, lard. Neapolitans were the first in Europe to embrace the tomato, since it was deemed poisonous in Europe as a member of the nightshade family. With the rise in popularity of tomato, people started using it more and more. Mozzarella cheese was also slowly gaining ground. Mozzarella had become available in Italy only after water buffaloes were imported from India in the 7th century (Mozzarella was first made with water buffalo milk).Its popularity grew very slowly until the last half of the 18th century. In fact, cheese and tomatoes did not meet on a pizza until 1889.

4. What is most commonly considered Pizza(tomato, mozzarella ,basil) was supposedly created on June 11,1889 by a pizza maker named Raffaele Esposito. This pizzaiolo (pizza maker) created a special pizza for the visit of Queen Margherita of Savoia. He made three different pizzas but the queen fell in love with one , in particular ,topped with three ingredients representing the three colours of the Italian flag. The Italian flag was represented by tomatoes(red),mozzarella (white) and basil(green).Esposito named the pizza "Pizza alla Margherita" in honour of the queen.

   Whether Esposito was the first to use those ingredients or not .this is known as the classic Neapolitan pizza or the modern day tomato and cheese pizza.

5. In the latter half of the 19th century, pizza migrated to America with the Italians. By the turn of the century, the Italian immigrants had begun to open their own bakeries and were selling groceries as well as pizza. Gennaro Lombardi opened the first true US pizzeria in 1905 at 531/3, Spring street in New York city, a part of the town known as "Little Italy."

6. In India, of late ,pizza has become a popular food. It has become a fashion and also a manner of showing that one is part of the famous Western culture. In fact, it is more of a fashion statement. The popularity of the food is rocketing. This is evident from a report by Fortune , a magazine. The two giants of the pizza industry, Pizza Hut and Dominos , are in hot competition with each other in India. India has 134 Pizza Huts and 149 Dominos locations, with each chain opening 50 stores a year.

7. The popularity of pizza in India, Fortune claims, is because of its similarity to India's native cuisine. Unlike Chinese and Japanese, Indians eat leavened bread (roti/naan) and a popular traditional version slathers it in butter and garlic-not unlike garlic bread, the most often ordered side dish at both Dominos and Pizza Hut franchises in India. Cheese(paneer) is ubiquitous in India's northern cuisine. Tomatoes and all kinds of sauces are prevalent everywhere. Combine these ingredients into one gooey, oily, tasty dish that you can eat with your hands-as Indians traditionally do and you have a hit. Compare this with another popular food, noodles. Sometimes it slurps down our forks and off the plate, and here we land up in a whole lot of mess. Added to this, is the embarrassment it would have caused, had the place been a famous restaurant or the boss's party. The one thing that increases the love for pizza among one and all is that we can all eat it with our hands.

8. Experts estimate that the Indian Pizza market will grow at a compound annual rate of 15 percent. As per estimates of the Ministry of food processing, the ready-to –eat market in India today exceeds rupees 40 billion (US $ 800 million),with the size of the heat-and –eat pizza market being Rupees 2.5 billion(US $ 50 million).Most of those sales will come in large metropolises and mini-metros like Pune, Ahmedabad, Hyderabad and Bangalore.

2.1 On the basis of your understanding of the passage, answer the following questions with the help of the given options.

(i) What does the word 'pizza 'mean?

a. to pinch b. to cut c. to slice d. to encircle

(ii) Which pizza represented the Italian flag?

a. Tomato and mozzarella b. Mozzarella and basil

c. Mozzarella, tomato and basil d. Mozzarella, tomato and spinach

2.2 Answer the following questions briefly.

(i) Why was Mozzarella not used initially in pizzas? When was it first used?

(ii) Why did Raffaele make a special pizza? How many pizzas did he make?

(iii) When did pizza migrate to America?

(iv) According to 'Fortune' ,why is pizza becoming popular in India?

(v) According to the author, how does pizza differ from noodles?

(vi) How much does the heat -and –eat pizza represent the ready -to -eat market in India?

2.3 Find the words from the passage which mean the same as the following.

(a) found everywhere (para 7) (b) spread liberally (para 7)

3. Read passage given below :

You wouldn't think it to look at them, but your salt and pepper shakers have caused a lot of problems over the years. Underneath the harmless ceramic bulb lies a history of kingdoms torn apart, newly discovered worlds and powerful trade dynasties. The story of spices fills many a book, but we are going to take an abridged look at salt here.

Salt doesn't just make your food tastier _it's actually required for life. Sodium ions help the body perform a number of basic tasks, including maintaining fluids in the blood cells and helping the small intestine absorb nutrients. We cannot make salt in our own bodies, so humans have always had to look into their environment to fulfill their needs. Early hunters could get a steady supply of salt from meat, but agricultural groups had to seek it out by following animal tracks to salt deposits.

The Egyptians were the first to realize the preservation possibilities of salt. Sodium draws the bacteria-causing moisture out of foods, drying them and making it possible to store meat without refrigeration for extended periods of time. Delicacies like our modern day parma hams, gravlax, bresaola and baccala are all the result of salt curing. But back in the day,this type of preservation was not limited to meat. Mummies were packed in salt too. In fact, when mummies were shifted down the Nileas cargo, they were taxed in the "salted meat" bracket.

How did ancient populations get their salt? The Shangxi province of China has a salt lake, yuncheng, and it is estimated that wars were being fought over control of its salt reserves as early as 6000 B.C.Salt was gathered from the lake during the dry season, when the water evaporated and flats of salt were exposed. The Egyptians got their salt from Nile marshes, while early British towns clustered around salt springs. In fact the suffix "wich" in English place names like Middlewich and Norwich is associated with areas where salt working was a common practice.

Even well into the American history, destinies were decided by salt. One example is India's Salt satyagraha. During the Civil War, salt was a precious commodity, used not only for eating but also for tanning leather, dyeing clothes and preserving troop rations. Confederate President Jefferson Davis even offered a military service waiver to anyone willing to work on salt production on the coast. The ocean was the only reliable source of salt for the South since inland production facilities were so valued that they became early targets of Union attacks. Consider this rich history next time you season your food.

(A) On the basis of your reading of the above passage make notes on it, using headings and sub-headings.
Use recognizable abbreviations (wherever necessary-minimum four) and a format you consider suitable. Also supply an appropriate title to it. **(5)**

(B) Write a summary of the passage in about 80 words. **(3)**

SECTION B (ADVANCED WRITING SKILLS) **30 Marks**

4. You are Rani/Raja . You have got a seat in IIT Kharagpur as you have scored a very good rank in JEE. You have decided to host a party for your close friends and relatives before you leave for Kharagpur. As Rani/Raja draft an informal invitation in not more than 50 words. **(4)**

OR

You are Koshika Khanna, the Cultural Secretary of Wellington Public School, Ooty. Write a notice for your school Notice Board informing students to participate in the programme on the FM Radio. Invite talented students to appear for trial for different items and Radio Jockey for special programme for children (word limit – 50).

5. You are P.L. Sharma, residing in No.12, Abu Bakr Road, Dubai. You want your daughter Navita, at present studying in Class VIII, Indian school, Dubai to be admitted in A.J. Public School Ajmer, next year, in class IX. As P.L. Sharma, write a letter to the Principal of Akash Public school, Ajmer enquiring of him the procedure for admission, fees and also asking for a prospectus. Your letter should be written within 150 words. **(6)**

OR

You are Kamla/Kamal. Recently you travelled from Durg to Bangalore by train. To your dismay, you found that the coach you travelled in was infested with cockroaches and rodents. You realized that such an unhygienic condition was due to the careless attitude of the employees of the railway services and also the lack of co-operation of the public in maintaining the cleanliness of the coaches. Write a letter to the editor of The Times, Raipur, expressing your views on the same. Also, suggest some measures to deal with this problem. Your letter should be written in about 120 words.

6. Social networking sites and various mobile applications are making a slave of humans. People, these days, are addicted to them and have hardly any time for the social interaction. Write a speech to be delivered in the morning assembly, expressing your views on the impact of the various social networking sites and mobile applications on real human interaction. You are Leena / Leroy.

(word limit -150-200) **(10)**

OR

You are Sweta/Sharat. You have to speak in a debate competition organized by your school .The topic for the debate is "Peer pressure helps students in performing better at school." Write the debate for Shweta/Sharat supporting or opposing the motion in about 150-200 words.

7. Arti/Anuj has been involved as a student volunteer in the ' Literacy Drive' and has been working in the slums for the last six months. She/he sees the pathetic condition of the slum dwellers from close quarters and so decides to write an article for the school magazine motivating the students to work for the poor and the downtrodden so that they also have a happy life like others. Write the article in about 150-200 words. **(10)**

PTO

OR

The number of cars that a country produces every year is one way of measuring its prosperity. At the same time, what the vehicles lead to are traffic jams, air pollution, road rage and an unhealthy competition among people. Write your views, in the form of an article of about 150-200 words, highlighting the demerits of private vehicles and the merits of public transport. You are Veena/Vignesh.

Section C - Literature and Long Reading Text

8. Read the extracts given below carefully and answer the questions that follow. **(1×4=4)**

"----------At back of the dim class
One unnoted, sweet and young.His eyes live in a dream,
Of squirrel's game, in tree room, other than this."

1. Name the poem and the poet.
2. What is the sweet boy engaged in?
3. What is the significance of the phrase 'other than this'?
4. Who were the other students in that class? (Mention any two)

OR

"It would be an exotic moment
without rush, without engines
We would all be together
In a sudden strangeness."

1.Name the poem and the poet.
2. What would be an 'exotic' moment?
3. In what way can that be an exotic moment?
4. Name the poetic device in the fourth line.

9. Answer any four of the following in 30-40 words each. **(3×4=12)**

a. Describe the mother in 'My Mother at sixty six'.
b. What are M. Hamel's views about learning one's native language?
c. How did the crofter treat the peddler?
d.Do you think the poet advocates total inactivity? Give reason.
e. Why does Hana wash the wounded man herself ?
f. Why did the rat trap peddler sign as Captain Von Stahle?

10. Answer the following question in 120-150 words. **(6)**

The grinding poverty and traditions obstruct the development of many children of India. Explain the statement with reference to the lives of Saheb and Mukesh (Lost spring).

OR

Describe the misadventure in the life of William Douglas. What change did it bring about in his life?

11. Answer the following question in 120-150 words. **(6)**

How did Dr. Sadao help in the escape of the American prisoner of war?

OR

Describe the efforts made by the Tiger king to achieve the target of killing a hundred tigers.

12. Answer the following question in 120-150 words. **(6)**

Describe the circumstances that led to the unveiling of the identity of the Invisible Man.

13. Answer the following question in 120-150 words . **(6)**

Attempt a character sketch of Mrs.Hall.

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DELHI PUBLIC SCHOOL, BHILAI (C.G.)

DATE : 17-09-2016 | **FIRST TERM EXAMINATION, 2016** | **3 Hours**

CLASS : XII | **MATHEMATICS** | **M.M : 100**

No. of Printed Pages : 2

General Instructions :

(i) All questions are compulsory.
(ii) This question paper contains 29 questions.
(iii) Question1-4 in Section A are very short-answer type questions carrying 1 mark each.
(iv) Question 5-12 in Section B are short-answer type questions carrying 2 marks each.
(v) Question 13-23 in Section C are long-answer-I type questions carrying 4 marks each.
(vi) Question 24-29 in Section D are long-answer-II type questions carrying 6 marks each.

Section-A

1. What is the principal value of $\cos^{-1}(\cos\frac{2\pi}{3}) + \sin^{-1}(\sin\frac{2\pi}{3})$?
2. If $f : R \to R$ is given by $f(x) = (3 - x^3)^{\frac{1}{3}}$, then find $f(f(x))$.
3. Consider the binary operation on Q defined by $a * b = a + 12b + ab$ for every $a,b \in Q$. Find $2 * \frac{1}{3}$
4. For the curve $y = 5x - 2x^3$, if x increases at 2 units/sec then how fast is the slope of the curve changing when $x = 3$

Section-B

5. If $y = (\log x)^x . x^{\log x}$ then find $\frac{dy}{dx}$.
6. If $x = a(\theta - \sin\theta)$, $y = a(1 + \cos\theta)$ find $\frac{dy}{dx}$.
7. Find a matrix A satisfying the matrix equation $\begin{bmatrix}2 & 1\\3 & 2\end{bmatrix} A \begin{bmatrix}-3 & 2\\5 & -3\end{bmatrix} = \begin{bmatrix}1 & 0\\0 & 1\end{bmatrix}$.
8. Evaluate : $\int \frac{\tan^4\sqrt{x}\sec^2\sqrt{x}}{\sqrt{x}} dx$.
9. Evaluate : $\int_0^{\frac{\pi}{2}} \frac{\sqrt[3]{\sin x}}{\sqrt[3]{\sin x}+\sqrt[3]{\cos x}} dx$
10. Find the approximate value of $\sqrt{0.0035}$, using differentiation.
11. Find the points on the curve $x^2 + y^2 - 2x - 3 = 0$ at which the tangents are parallel to X - axis.
12. Verify mean value theorem for the function $f(x) = \sin x + \cos x$ in $[0, 2\pi]$.

Section-C

13. If $y = (\cot^{-1}x)^2$, then show that $(x^2 + 1)^2 \frac{d^2y}{dx^2} + 2x(x^2 + 1)\frac{dy}{dx} = 2$.
14. Sand is pouring from a pipe at the rate of 12 cm^3/s. The falling sand forms a cone on the ground in such a way that the height of the cone is always one-sixth of the radius of the base. How fast is the height of the sand cone increasing when the height is 4 cm.
15. Evaluate : $\int \frac{3x+5}{4x^2+5x-7} dx$.
16. Evaluate : $\int_1^4 (|x - 1| + |x - 2| + |x - 3|) dx$.

(OR)

Evaluate : $\int_{-\frac{\pi}{2}}^{\frac{\pi}{2}} \frac{dx}{e^{\sin x}+1}$

17. Show that $y = \log(1 + x) - \frac{2x}{2+x}$, $x > -1$, is an increasing function of x throughout its domain
18. Prove that $\cot^{-1}\left(\frac{\sqrt{1+\sin x}+\sqrt{1-\sin x}}{\sqrt{1+\sin x}-\sqrt{1-\sin x}}\right) = \frac{x}{2}$, $x \in (0, \frac{\pi}{4})$

(OR)

Prove that : $2\sin^{-1}\frac{3}{5} - \tan^{-1}\frac{17}{31} = \frac{\pi}{4}$

19. Show that the relation R defined by $(a,b) R (c,d) \Rightarrow a+d = b+c$ on $A \times A$, where $A = \{1,2,3,\ldots,10\}$ is an equivalence relation.

PTO

20. Show that the function f(x) defined as $f(x) = \begin{cases} \frac{\frac{1}{e^x}-1}{\frac{1}{e^x}+1} & if\ x \neq 0 \\ -1 & if\ x = 0 \end{cases}$ is discontinuous at x = 0.

21. If cosy = x cos(a+y), with cosa $\neq \pm 1$, prove that $\frac{dy}{dx} = \frac{cos^2(a+y)}{sina}$

22. Using properties of determinants, prove that $\begin{vmatrix} a & b-c & c+b \\ a+c & b & c-a \\ a-b & b+a & c \end{vmatrix} = (a+b+c)(a^2+b^2+c^2)$

(OR)

Using properties of determinants, prove that

$$\begin{vmatrix} 1+a^2-b^2 & 2ab & -2b \\ 2ab & 1-a^2+b^2 & 2a \\ 2b & -2a & 1-a^2-b^2 \end{vmatrix} = (1+a^2+b^2)^3$$

23. Using elementary transformations find the inverse of the matrix $\begin{bmatrix} 2 & -2 & 0 \\ 1 & 2 & -2 \\ 0 & -1 & 4 \end{bmatrix}$

Section-D

24. Two schools A and B decided to award prizes to their students for three values honesty(x), punctuality(y) and obedience(z). School A decided to award a total of ₹ 11000 for the three values to 5,4 and 3 students respectively while school B decided to award ₹ 10700 for the three values to 4,3 and 5 students respectively. If all the three prizes together amount to ₹ 2700, then (i) represent the above situation by a matrix equation and form linear equations using matrix multiplication. (ii) Solve using matrix method. (iii) which value you prefer to be rewarded most and why?

25.(i) Solve for x : $\begin{vmatrix} a+x & a-x & a-x \\ a-x & a+x & a-x \\ a-x & a-x & a+x \end{vmatrix} = 0.$

(ii) Express $\begin{bmatrix} 5 & 4 & -2 \\ 3 & -4 & 6 \\ 0 & -2 & 3 \end{bmatrix}$ as a sum of a symmetric and a skew – symmetric matrices.

26. Show that the height of the cylinder of greatest volume which can be inscribed in a right Circular cone of height h and semi vertical angle α is one-third of that of the cone and the Greatest volume of cylinder is $\frac{4}{27}\pi h^3 tan^2\alpha$.

(OR)

A window is in the form of a rectangle surmounted by a semi-circle. The total perimeter of the window is 10m. Find the dimensions of the window to admit maximum light through the whole opening.

27. Evaluate : $\int_0^{\frac{\pi}{2}} \frac{xsinxcosx}{sin^4x+cos^4x}\,dx$ **(OR)**

Evaluate : $\int_0^{\frac{\pi}{2}} \frac{cosx\,dx}{1+cosx+sinx}$

28. (i) Consider $f: R_+ \to [-9,\infty)$ given by $f(x) = 5x^2 + 6x - 9$. Show that f is invertible with $f^{-1}(y) = \left[\frac{\sqrt{5y+54}-3}{5}\right]$.

(ii) Let * be a binary operation on Q_0 (set of all non-zero rational numbers) defined by $a*b = \frac{ab}{4}$, for every $a,b \in Q_0$. Then find the identity element in Q_0.

29. (i) Evaluate : $\int_0^1 (x^2+3)dx$ as a limit of a sum.

(ii) Evaluate : $\int e^x \left(\frac{1+sinx}{1+cosx}\right)dx$

(OR)

(i) Evaluate: $\int_a^b e^x dx$ as a limit of a sum.

(ii) Evaluate : $\int_0^{\frac{\pi}{4}} \log(1+tanx)dx.$

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DELHI PUBLIC SCHOOL, BHILAI (C.G.)

DATE : 12-09-2016 | **FIRST TERM EXAMINATION, 2016** | **Time : 3 Hours**

CLASS : XII | **PHYSICS** | **M.M : 70**

No. of Printed Pages : 2

General Instructions -

i) There are 26 questions in all. All questions are compulsory.

ii) The question paper has five sections.

iii) Section A contains five questions of one mark each. Section B contains five question of two marks each, section C contains twelve questions of three marks each. Section D has a value based question of four marks and section E contains three questions of five marks each.

iv) There is no overall choice. However an internal choice has been provided in one question of two marks, one question of three marks and all three questions of five marks.

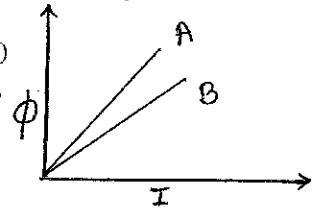
v) You may use the following values of physical constants wherever necessary.
$\mu_0 = 4\pi \times 10^{-7} TmA^{-1}$ radius of earth r = 6.4×10^6 m.

SECTION A

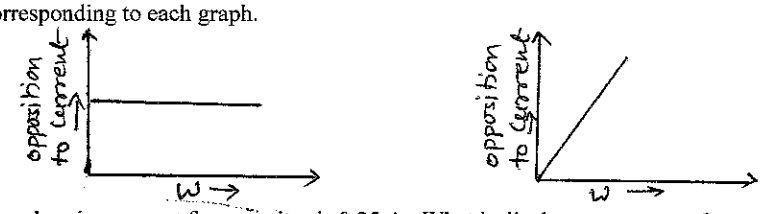
1) Is electrostatic potential necessarily zero at a point where electric field strength is zero? Give an example to illustrate your answer 1

2) A charged particle moves through a region of uniform magnetic field. Define one Tesla on the basis of force acting on it. 1

3) A plot of magnetic flux (Ø) versus current (I) is shown in figure for two inductors A and B which of the two has larger value of self inductance. 1



4) The graph shown in fig(a) and fig(b) represents the variation of opposition offered by the circuit element to the flow of AC with the frequency of applied emf. Identify the circuit element corresponding to each graph. 1



5) The charging current for capacitor is 0.25 A. What is displacement current? 1

SECTION B

6) A 600 pF capacitor is charged by a 200 V supply. It is then disconnected from the supply and connected to another uncharged 600 pF capacitor. How much energy is lost in the process? 2

7) What is an ideal electric dipole? What happens to net force and torque acting on a dipole when it is placed in a non-uniform electric field? 2

8) The potential difference V is applied to a conductor of length L, diameter D. How are the electric field E and drift velocity V_d affected **a)** V is doubled **b)** L is doubled. Explain your answer. 2

9) State Biot-Savart's law and write its vector form. 2

10) A plane electromagnetic wave travels in vaccum along the Y direction write
i) The direction of its electric and magnetic field vectors and
ii) The ratio of the magnitudes of electric field and magnetic field. 2

(OR)

What is meant by the transverse nature of EM waves? Draw a diagram showing the propagation of an electromagnetic wave along the X-direction, indicating clearly the directions of oscillating electric and magnetic fields associated with it.

SECTION C

11) a) What is electrostatic induction? 3
b) Describe how two metal spheres can be oppositely charged by induction.

12) Define : a) Dielectric b) Dielectric constant c) Dielectric strength 3

13) Derive the formula for total power consumed when electrical appliances are connected with DC source in **a)** series **b)** parallel. 3

14) A 10 m long wire of uniform cross section of 20 Ω resistance is used as a potentiometer wire. This wire is connected in series with a batter of 5V along with an external resistance of 480Ω. If an unknown emf E is balanced at 600 cm of this wire. Calculate the **i)** potential gradient of the potentiometer wire and **ii)** value of emf E. 3

15) a) State the Wheatstone bridge principle. 3
b) Obtain the condition for balanced Wheatstone bridge.

16) Write principle of cyclotron and show that magnetic resonance frequency of cyclotron does not depend upon speed of charged particle. 3

PTO

17) With the help of figure. Show mathematically that deflection produced in the galvanometer coil is proportional to current flowing through it. 3

18) Two concentric circular coils X and Y of radii 16 cm and 10 cm respectively lie in the same vertical plane containing the north south direction coil X has 20 turns and carries a current of 16 A ; coil Y has 25 turn and carries a current of 18A. The sense of current in X is anticlockwise and in Y clockwise for an observer looking at the coil facing west, give the magnitude and direction of net magnetic field due to the coils at their centre. 3

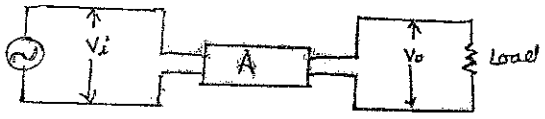
(OR)

The earth's field, it is claimed roughly approximates the field due to a dipole of magnetic moment 8×10^{22} J/T located at its centre. Check the order of magnitude of this number in some way.

19) An aircraft with a wingspan of 40 m flies with speed of 1080 km/hr in eastward direction at a constant altitude in northern hemisphere. Where the vertical component of earth's field is 1.75×10^{-5}T. Find the emf that develops between the tips of wings. 3

20) What are eddy currents? Write two applications of eddy currents. How are eddy currents minimized? 3

21) a) What is working principle of transformer? 3
b) Why is the core of transformer made of magnetic material of high permeability?
c) Identify the device 'A' given Vi>Vo



22) How are infrared waves produced? Why are these referred to as "Heat Waves" write their one important use. 3

SECTION D

23) Manish and Rajnish lived in an unauthorized colony. They found that most of the people of that colony stole power from transmission lines using hooks. They had read in the news paper about different fire accidents caused due to electric short circuits. Along with some of their friends and some responsible representatives of the area, they visited house to house of that colony and made people aware of the risks involved in short circuiting. They also explained the people the importance of paying electric bills. They succeeded in changing the mindset of the people.
Answer the following questions based on the above information : 4
a) What according to you are the values displayed by Manish and Rajnish.
b) A household circuit has a fuse of 5 A rating. Find the maximum number of bulbs of rating 60W – 220 V each which can be connected in this circuit.

SECTION E

24) a) Using Gauss' law deduce the expression for the electric field due to uniformly charged spherical conducting shell of radius R at a point **i)** out side **ii)** inside the shell. 3+1+1
b) Plot a graph showing variation of $\vec{E}$ as a function of r>R and r<R (r being distance from centre of shell).
c) Two charges of magnitude '-3q' and '+2q' are located at points (a,0) and (4a,0). What is the electric flux due to these charges through a spherical shell of radius 5a with its centre at the origin.

(OR)

a) Derive expression for electric potential at any general point at distance 'r' from the centre of electric dipole.
b) Sketch equipotential surface for electric dipole.
c) Two charges '–q' and '+q' are located at points (0,0, -a) and (0,0, a) respectively. How much work is done in moving a small test charge from the point (5,0,0) to (-7,0,0) along the X-axis.

25) a) Using phasor diagram derive expression for the impedence of a LCR series circuit. 3+2
b) A series LCR circuit connected to a variable frequency 230V source L = 5.0 H, C=80μF, R=40 Ω. Determine the source frequency which drives the circuit in resonance.

(OR)

a) Derive expression for mutual inductance of two long coaxial solenoids of same length wound over the other.
b) A solenoid of length 50 cm with 20 turns per cm and area of cross section 40 cm^2 completely surrounds another coaxial solenoid of same length area of 25 cm^2 with 25 turns per cm. Calculate coefficient of mutual inductance.

26) a) How diamagnetic, paramagnetic and ferromagnetic samples will behave ? 3+2
i in external non-uniform magnetic field.
ii after removal of external magnetizing field .
iii when temperature is increased.
b) If a toroid was Bismuth for its core. Will the field in the core be slightly greater or less than when the core is empty? Give reason to your answer.

(OR)

a) Derive an expression for magnetic dipole moment of an electron revolving around a nucleus.
b) Define Bohr magneton and write its value.

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DELHI PUBLIC SCHOOL, BHILAI (C.G.)

DATE : 21-09-2016 **FIRST TERMINAL EXAMINATION, 2016** **Time : 3 Hours**

CLASS : XII **CHEMISTRY** **M.M : 70**

No. of Printed Pages : 2

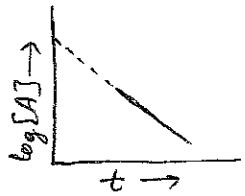
General Instructions :

- ❖ All questions are compulsory.
- ❖ Q.nos. 1 to 5 carry one mark each.
- ❖ Q.nos. 6 to 10 carry two marks each.
- ❖ Q.nos. 11 to 22 carry three marks each.
- ❖ Q.nos. 23 carries four marks.
- ❖ Q.nos. 24 to 26 carry five marks.

1. What do you mean by activity of a catalyst? 1
2. Write the structure of an isomer of compound C_4H_9Br which is most reactive towards SN_1 reaction. 1
3. Name the non-stoichiometric point defect responsible for colour in alkali metal halides. 1
4. What do you mean by Williamson's synthesis? 1
5. Classify each of the following being either a p-type or n-type semi conductor. 1
   (a) Ge doped with In (b) Si doped with B
6. Copper crystallises into FCC lattice with edge length of 3.61×10^{-8} cm. Calculate the density of copper. Given, atomic mass of Cu = 63.5. 2
7. State Rate law. In a reaction if the concentration of the reactant R is quadrupled, the rate of reaction becomes 64 times. Calculate the order of the reaction. 2
8. Draw the graph showing the variation of the extent of chemical adsorption of a gas w.r.t pressure and temperature. Write the expression of Freundlisch adsorption isotherm for the adsorption of gas. 2
9. Write two basic difference between physisorption and chemisorption. 2

   (OR)

   Name the four factors which influence the absorption of gas on a solid.
10. State Henry's law. At same temperature hydrogen is more soluble in water than Helium. Which of them will have higher alue of K_H ? 2
11. Define Packing efficiency in a crystal. Derive the packing efficiency in a FCC. 3
12. State Kohlrausch law. Calcualte $\Lambda^o m$ for CH_3COOH, if $\Lambda^o m\ HCl = 426\ scm^2mol^{-1}$ $\Lambda^o m\ NaCl = 126\ scm^2mol^{-1}$ $\Lambda^o m\ CH_3COONa = 91\ scm^2mol^{-1}$ 3
13. How the number of tetrahedral voids and octahedral voids related to the number of atoms? A compound from hexagonal closed packed structure. What is the total number of voids in 0.5 moles of it? How many of these are tetrahedral voids? 3
14. How do you convert the following : 3
    a) Chlorobenzene to biphenyl
    b) Propane to 1-iodopropane
    c) 2-Bromobutane to but-2-ene
15. Give reasons : 3
    (a) Osomotic pressure method is preferred to other colligative properties in determining the molecular mass of a polymer.
    (b) Sodium chloride solution freezes at a lower temperature than water but boils at a higher temperature.
    (c) Scuba divers carry air diluted with Helium.
16. (a) The cleavage of alkyl phenyl ether with HBr always give phenol and alkylbromide and not bromobenzene and alkanol. Why? 3
    (b) How does Luca's reagent help in the distinction of primary, secondary and tertiary alcohols?
17. Study the given graph and answer the following questions : 3



    (a) Predict the order of reaction and write the unit for its rate constant.

    (b) Derive the Half life Period for this reaction.
18. Explain the following :
    (a) Sandymeyer's reaction (b) Swart's reaction (c) Friedel-Crafts alkylation
19. Account for the following : 3
    a) Physisorption decreases with the increase in temperature.
    b) It is necessary to remove CO when ammonia is obtained by Haber's process.
    c) Ester hydrolysis is slow in the beginning and become faster after sometime.

    (OR)

    a) Powdered substances are more effective adsorbents than their crystalline form.
    b) Enthalpy of adsorption is higher in chemisorption.
    c) Zeolites are called shape-selective catalyst.

PTO

20. Explain the mechanism for acidic dehydration of alcohols. 3

21. Calculate the standard cell potential of galvanic cell in which the following reaction takes place : 3

$2Cr(s) + 3Cd^{2+}(aq) \rightarrow 2Cr^{3+}(aq) + 3Cd(s)$

$E^{O}_{Cr^{3+}(aq.)/Cr\,(s)} = -0.74V,\ E^{O}_{Cd^{2+}(aq)/Cd(s)} = -0.40V$

Also, calculate the ΔG^{O} and equilibrium constant for the reaction.

22. Account for the following : 3

(a) Haloarenes are chemically less reactive than halo alkanes.

(b) Inspite of polar nature halo alkanes are insoluble in water.

(c) SN_1 reactions are accompanied by racemization in optically active alkyl halide.

23. As we know, production of electricity by thermal power plant is not very good method as it is a major source of pollution. In these plants chemical energy of fossil fuel is first used to convert water into high pressure steam which is used to run turbine to produce electricity. 4

(a) Suggest one cell which makes use of fuel but does not cause pollution.

(b) Write the reactions occurring at anode and cathode in this cell.

(c) Name one catalyst and one fuel used in this cell.

(d) Give the values associated with using this cell.

24. a) Convert the following : 5

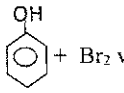
(i) Phenol to Acetophenone (ii) Acetone to 2-Methyl propan-2-ol.

b) Name the following :

(i) an alcohol that is used to prepare $CH_3 - \overset{O}{\overset{\|}{C}} - O - \overset{CH_3}{\overset{|}{CH}} - CH_3$ 2+1+2=5

(ii) a chemical test distinguishing ethanol and phenol.

c) Complete the following reactions :

(i)  + Br_2 water $\rightarrow$ (ii) $CH_3 - \underset{OH}{\overset{|}{CH}} - CH_3 \xrightarrow[573\ K]{Cu}$

(OR)

a) Explain (i) Kolbe's synthesis (ii) Reimer-Teimann Reaction

b) Arrange the following in increasing order of property mentioned against them

i) phenol, o-nitrophenol, cresol (acidity) 2+2+1

ii) Hexan-1-ol, ethanol, methanol, butan-1-ol (boiling point)

c) Write the IUPAC name of $CH_3 - \underset{CH_3}{\overset{|}{CH}} - \underset{OH}{\overset{|}{CH}} - \underset{C_2H_5}{\overset{|}{CH}} - \underset{OH}{\overset{|}{CH}} - CH_3$

25. a) 6.8 g of a compound is dissolved in 100 g water. Calculate the osmotic pressure of this solution at 298 K, when boiling point of solution is 100.11°C. K_b for water is 0.52 Km^{-1} and R = 0.082 L atoms $K^{-1}mol^{-1}$. 5

b) State Raoult's law for solution containing a non volatile solute. What is meant by +ve and –ve deviations? How is the sign of ΔH solution related to +ve and –ve deviations?

(OR)

a) A 0.1539 molal aqueous solution of cane sugar (molar mass =342 g mol^{-1}) has a freezing point of 271 K. What will be the freezing point of an aqueous solution containing 5 g glucose (molar mass =180$gmol^{-1}$) per 100 g of solution? Given, freezing point of water = 273.15 K.

b) An aqueous solution of sodium chloride freezes below 273 K. Explain depression in freezing point of water with the help of a suitable diagram. Show that depression in freezing point of a solution is a colligative property.

26. a) For a first order reaction, show that the time required for 99% completion is twice the time required for the completion of 90% of the reaction. 5

b) The rate constant of reaction is 1.5×10^{7} sec^{-1} at 50°C and 4.5×10^{7} sec^{-1} at 100°C. Calculate activation energy for the reaction.

(OR)

a) If half life period of a first order reaction is x and 3/4th half life period of same reaction is y, how are x and y related to each other?

b) Rate constant k of a reaction varies with temperature T according to the equation.

$$\log k = logA \frac{-E_a}{2.303R}\left(\frac{1}{T}\right)$$

Where, $E_a \rightarrow$ activation energy.

When a graph is plotted for log k Vs. 1/T, a straight line with a slope of $-4250\ K$ is obtained. Calculate E_a for the reaction. Given, R=8.314 JK^{-1} mol^{-1}

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DELHI PUBLIC SCHOOL, BHILAI (C.G.)

DATE : 23-09-2016 | **FIRST TERM EXAMINATION, 2016** | **Time: 3 Hours**

CLASS : XII | **BIOLOGY** | **M.M : 70**

No. of Pages Printed : 2

General Instructions :

i) **All questions are compulsory and answer serially.**

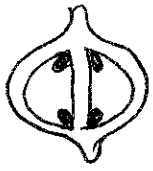
ii) **The question paper consists of four sections A,B, C and D. Section A contains 5 questions of 1 mark each. Section B is of 5 questions of 2 marks each. Section C is of 12 questions of 3 marks each. Section D has a value based question of 4 marks, whereas Section E is of 3 questions of 5 marks each.**

iii) **There is no overall choice. However, an internal choice has been provided in one question of 2 marks, one question of 3 marks and two questions of 5 marks weightage. A student has to attempt only one of the alternatives in such questions.**

iv) **Wherever necessary, the diagrams drawn should be neat and properly labelled.**

SECTION A

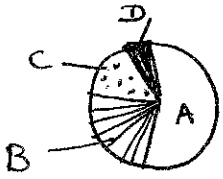
1. In the given figure, label the part which is protective in function and that which is responsible for producing new plants. (1)



2. The spermatogonia of an animal contains 32 chromosomes. What will be the number of chromosomes in its secondary spermatocytes and spermatids respectively. (1)
3. What is the chemical name of thymine? (1)
4. What do the Euro II norms stipulate? (1)
5. Can you think of any difference between DNAs and DNAse? (1)

SECTION B

6. The figure shows the relative contribution of four green house gases to global warming. (2)



(a) Identify the gases A and C

(b) Why are these four gases called the green house gases?

(OR)

(a) What is meant by 'competitive release'?
(b) Why did the Abingdon tortoise in Galapagos islands become extinct?

7. Plants like Viola and Oxalis produce two types of flowers. Name and describe these two types of flowers. (2)
8. Fill in the blanks a,b,c and d. (2)

a	A specialized diploid cell that undergoes meiosis
Embryogenesis	b
c	The process by which male honeybees develop
Pericarp	d

9. Give reasons for each of the following : (2)
   a) Gametes are said to be pure for a character.
   b) Deletion on insertion of a segment of DNA results in chromosomal aberrations.
10. (i) Following are the steps in MOET programme for herd improvement in which a cow has been administered hormones with FSH like activity. Arrange steps A to D in their correct sequence. (2)
    A- Transferred to a surrogate mother.
    B- It is either mated with an elite bull or artificially inseminated.
    C- Fertilised eggs at 32 – cell stage are recovered non – surgically
    D- It produces 6-8 eggs per cycle.

(ii) What type of male and female are selected MOET programme?

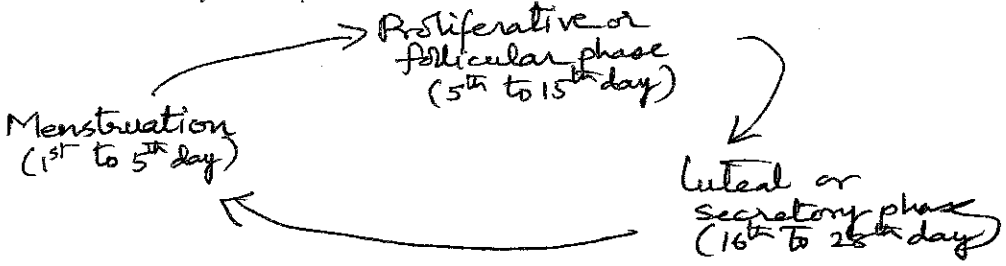
SECTION C

11. (i) Explain why the term homozygous and heterozygous with respect to X linked trait are applicable to human females, but not to human males. What term is used in case of males? (3)

(ii) If the frequency of the parental combination of genes is higher than 25% in a dihybrid cross, what does it indicate? (3)

12. How do the IUDs prevent pregnancy?

13. The events of the menstrual cycle are represented below. (3)



(i) State the levels of FSH, LH and progesterone simply by mentioning high or low, around 13th to 14th day and 21st to 23rd day.

(ii) In which of the above mentioned phases does the egg travel to the fallopian tube?

(iii) Why is there no menstruation upon fertilization?

14. Draw a schematic representation of a dinucleotide. Label the following : (3)

i) The components of a nucleotide

ii) N-Glycosidic linkage

iii) Phosphodiester linkage

iv) 3' end.

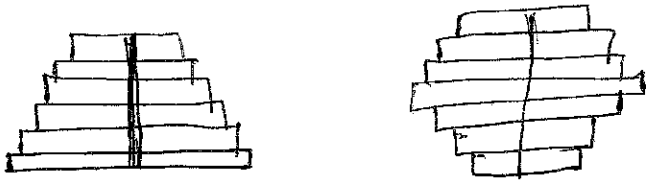
15. a) Baculoviruses are excellent candidates for IPM in an ecologically sensitive area. (3)

Explain giving two reasons.

b) What is the fate of 'flocs' in the activated sludge?

16. Draw a diagram of enlarged view of the egg apparatus showing the entry of a pollen tube into a synergid and the discharge of male gametes into it. (3)

17.



(i) Write the names given to the two kinds of age profiles a and b.

(ii) Which one of them is ideal for a population and why? (3)

18 a) How is the eukaryotic DNA measuring about 2.2 metres packed in a space of few microns inside the nucleus ? (3)

b) If the length of E. Coli DNA is 1.36 nm, calculate the number of base pairs in E. Coli.

19. Why male are heterogametic? Can there be female heterogamety. Give example if any. (3)

20. a) State the 'transforming principle'. (3)

b) Give two points of difference between α thalassemia and β thalassemia.

21. Identify A,B,C and D in the table given below : (3)

Crop	Variety	Resistance to disease
Wheat	A	leaf and stripe rust
B	Pusa Subhra	Black rot
Cowpea	Pusa Komal	C
Brassica	Karan Rai	D

22. Explain the role of the following in increasing the soil fertility and crop yield :

(a) leguminous plants (b) cyanobacteria (c) mycorrhizae

SECTION D

23. In nature ie in the wild birds lay eggs seasonally during a particular time of the year, but in a poultry farm, eggs are produced throughout the year. (4)

a) Give reason for this observation.

b) Is it ethically/morally correct in your opinion. Justify your argument.

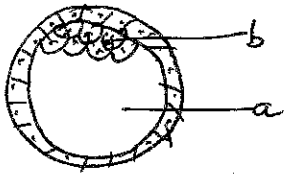
c) Name the cycle seen in birds for reproduction.

SECTION E

24. Show diagrammatically the stages of embryonic development from zygote upto implantation in humans. (5)

(OR)

(i) Name the stage of human embryo the figure represents.



(ii) Identify (a) and (b)

(iii) Mention the function of 'a'.

(iv) Mention the fate of 'b' after implantation in the uterus.

(v) Where are the stem cells located in this embryo?

25. (a) Mention the functions the predators perform in an ecosystem. (5)

(b) In a pond there were 24 lotus plants, 8 new plants were added by the way of reproduction in one year. Calculate the birth rate of the lotus plant.

(OR)

During the past century, the temperature of the earth has increased by 0.6°C

(i) What technical term is given to refer to this phenomenon?

(ii) What are its possible harmful effects?

(iii) Mention the strategies that can reduce this.

26. (a) Give an example of pleiotropy in pea seeds. Work out the above cross between the homozygous dominant and recessive parents to explain the phenotypic ratio. (5)

(OR)

Give reasons why :

(i) most zygotes in angiosperms divide only after certain amount of endosperm is formed.
(ii) ground nut seeds are exalbuminous and castor seeds are albuminous.
(iii) micropyle remains as a small pole in the seed coat of a seed.
(iv) integuments of an ovule harden and the water content is highly reduced as the seed matures.
(v) apple and cashew are not called true fruits.

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DELHI PUBLIC SCHOOL, BHILAI (C.G.)

DATE : 12-09-2016 **FIRST TERMINAL EXAMINATION - 2016** **TIME : 3 HOURS**

CLASS : XII **ACCOUNTANCY** **M. M. : 80**

No. of Printed Pages : 3

GENERAL INSTRUCTIONS:

1. This question paper contains two parts A and B.
2. Both the parts are compulsory.
3. Each question carries marks indicated against it.
4. All parts of questions should be attempted at one place.

PART A (ACCOUNTING FOR COMPANIES AND PARTNERSHIP FIRMS)

1 What does the balance in Realization Account represent? (1)

2 Do all forms of business organization prepare Profit and Loss Appropriation accounts? (1)

3 Will the interest on capital be paid to the partners if there is loss? (1)

4 Give any one difference between the dissolution of partnership and dissolution of partnership firm. (1)

5 E, F, G and H are partners sharing profits in the ratio of 1:4:3:5, E and H retire and their share were taken by F and G equally. Calculate new profit-sharing ratio of remaining partners. (1)

6 P, Q and R are partners in a firm without any partnership deed. R retires, his capital account after making adjustment of reserves and profit on revaluation exists at Rs. 64,000. P and Q have agreed to pay him Rs. 80,000 in full settlement of his claim. Record necessary journal entry for goodwill on R's retirement. (1)

7 A, B and C are partners in a firm sharing profits in the ratio of 3: 2: 1 respectively. C wants that the profits sharing ratio be equal and it should be applicable retrospectively for the last three years. A and B have no objection to this arrangement. Profits of the last three years were ₹ 1, 20,000, ₹ 94,000 and ₹ 1,10,000 respectively. Record the adjustment by means of a journal entry and show the working notes. (3)

8 A and B share profits and losses in the ratio 2 : 1 and on 1st January, 2015 they admit C who is to have one tenth share of the profit with a guaranteed minimum of ₹ 8,000. A and B continue to share profits as before. The Profit of the firm in 2015 is ₹ 50,000. Prepare Profit and Loss Appropriation Account. (3)

9 A firm has earned an average profit of ₹ 50,000 during the last years and the normal rate of return in similar type of business is 10%. Find out the goodwill by capitalization method assuming that the firm owns total assets worth ₹ 5,50,000 including therein a goodwill of ₹ 50,000 and outside liabilities worth ₹ 1,00,000.

Also show that goodwill amount to be the same under both average profit basis and super profit basis of capitalization. (3)

10 Anil and Mukesh are sharing profits in the ratio 3: 2. They admitted Ratan and gave him 2/3rd share which he got equally from both the old partners. Ratan brings ₹ 5, 00,000 as capital. The goodwill of the firm is valued at ₹ 90,000 but Ratan does not bring any cash for goodwill. There is goodwill appearing in the balance sheet of old partners at ₹ 50,000. The partner's capitals are fixed as per agreement. Write journal entries for the treatment of goodwill. (3)

11 Anand and Bhasin are partners with the following capital balance as on 1st January 2015.

	Capital Account	Current Account
Anand	3, 00,000	30,000 (Cr.)
Bhasin	90,000	6,000 (Cr.)

On 1st July 2015, Anand withdrew ₹ 60,000 from his capital and Bhasin added ₹ 30,000 as further capital on the same date. Interest on capital is agreed to allow @ 6% p.a. Manager of the firm entitled to receive a commission of 10% of the profit before any adjustment is made according to the deed. Profit earned during the year was ₹ 1, 20,000. Show the capital account and current account of the partners who share profits in the ratio 3: 2. (4)

12 A, B and C are partners sharing profits in the ratio of 3: 2: 1. On 1.4.2016 they decided to share profits equally. On that date there was a credit balance of ₹ 60,000 in their Profit and Loss Account and a balance of ₹ 30,000 in General Reserve Account. Instead of closing the General Reserve Account and Profit and Loss Account, it is decided to record an adjustment entry for the same.

You are required to record the necessary adjustment entry to give effect to the above arrangement. (4)

13 A, B and C were partners in firm sharing profits in the ratio of 4:3:3. The firm was dissolved on 28.2.2016. After transfer of assets and external liabilities to Realization Account following transaction took place:

(i) Krishna, a creditor, to whom ₹ 16,000 were due to be paid, took over machinery at ₹ 20,000. Balance was paid by him in cash.

(ii) An unrecorded liability of the firm ₹ 8,000 was paid by A.

(iii) Furniture of the book value of ₹ 20,000 was taken over by B at a discount of 10%.

(iv) Expenses of realization ₹ 5,000 were to be borne by C, a partner. C used firm's cash for paying these expenses. (6)

(v) A bill receivable for ₹4,000 was discounted with the bank. It was dishonoured due to acceptor being declared as insolvent. 30% was recovered from the estate.

(vi) Firm possessed a patent right which was written-off as it was considered worthless. Partner B was agreed to take it over ₹ 1,500.

14 Samar, Amar and Pankaj were sharing profits as 5: 3: 2. Samar decided to retire on March 31st 2016. On that date their capitals after necessary adjustment and adjustments for goodwill stood at ₹ 85,000, ₹ 78, 000 and ₹ 75,000 respectively. The cash balance as on that date was ₹ 20,000.

Samar was to be paid through cash brought in by Amar and Pankaj. They have to bring in cash such that their capitals become proportionate to their new profit sharing ratio of 4: 1.

Calculate the amounts to be brought in or taken away by each of them so that a minimum amount of ₹ 5,000 is left in cash account. Pass necessary entries. (6)

15 M, N and O decided to dissolve their partnership on31-3-2016.They were sharing profits and losses in the ratio of 3:2:1 and their Balance Sheet was as under:

Liabilities		₹	Assets	₹
Capital Accounts: -			Land	81,000
M	80,000		Stock	56,760
N	40,000	1,20,000	Sundry Debtors	18,600
	----------		O's Capital	23,000
Bank Loan		20,000	Bank	10,840
Sundry Creditors		37,000		
Provision for Bad Debts		1,200		
Stock Fluctuation Reserve		12,000		
		1,90,200		1,90,200

The Stock of value ₹ 41,660 is taken over by M for ₹ 35,000 and he agreed to discharge Bank Loan. The remaining Stock was sold at ₹ 14,000 and Debtors amounting to 10,000 realized ₹ 8,000. Land is sold for ₹ 1, 10,000. The remaining Debtors realize 50% of their book value. Cost of Realization is ₹ 1,200. There was a typewriter not recorded in the books worth ₹ 6,000, which is taken over by one of the creditor at this value. Show Realization Account. (6)

16 The following is the balance sheet of G and M as on 31st March, 2016 who shares profits and losses in the ratio of 2: 1.

Liabilities		₹	Assets	₹
Creditors		10,000	Cash at Bank	1,000
Reserve Fund		6,000	Sundry Debtors	10,000
Capital:			Stock	20,000
	Rs.		Land and Building	20,000
G	18,000			
M	17,000	35,000		
	———	51,000		51,000

PTO

On 1st April 2016 C is admitted into partnership for 1/4th share on the following terms :

(a) That he should bring in ₹ 15,000 as his capital and ₹ 6,000 as premium for goodwill.

(b) That land and building be revalued at ₹ 25,000 and stock at ₹ 18,500.

(c) That ₹ 500 is provided for doubtful debts.

(d) That after the above adjustments, the capital of the old partners be adjusted on the basis of the new partner's capital, having regard to profit sharing ratio. Excess or shortage will be adjusted through actual cash bought in or withdrawn by the partners. Give necessary Journal entries. (8)

17 P, Q and R are partners sharing profit in the ratio 2: 2: 1. Their Balance Sheet on 31st March, 2016 was as under:

Liabilities	₹	Assets	₹
Sundry Creditors	40,000	Goodwill	30,000
Reserve Fund	25,000	Fixed Assets	60,000
Capital Accounts:		Stock	10,000
P	30,000	Sundry Debtors	20,000
Q	25,000	Cash at Bank	15,000
R	15,000		
	1,35,000		1,35,000

Q died on 15th June, 2016. According to the deed his legal representative was entitled to:

(i) Balance in Capital Account.
(ii) Share of goodwill valued on the basis of thrice average of the past four year's profits.
(iii) Share in profits upto the date of death on the basis of average profits for the past four years.
(iv) Interest on capital @ 12% p.a.

Profits for the years ending on March 31st of 2013, 20104, 2015, and 2016 respectively were ₹ 15,000; ₹ 17,000; ₹ 19, 000 and ₹ 13,000.

Q's legal representatives were to be paid the amount due, P and R continued as partners by taking over Q's share equally. Draw up Q's Account to be rendered to his executor. (8)

PART-B

(FINANCIAL STATEMENTS ANALYSIS)

18 List the major headings on the assets side of the Balance Sheet of a company as per Schedule III, Part I of the Companies Act 2013. (1)

19 State the importance of Financial Statement Analysis. (1)

20 Under which major head and sub-heading will the following items be placed in the Balance Sheet of a company as per Schedule-III Part-I of the Companies Act,2013: (4)

(i) Securities Premium Reserve
(ii) Bonds
(iii) Loans repayable on demand
(iv) Live Stock
(v) Goodwill
(vi) Loose tools
(vii) Govt. Securities
(viii) Land and Building

21 Prepare Comparative Statements of Profit and Loss with the help of the following information: (4)

Particulars	Note No.	31st March, 2016 (₹)	31st March, 2015 (₹)
Revenue from Operations		15,00,000	12,00,000
Other Income		3,00,000	2,00,000
Cost of Materials Consumed		5,00,000	4,00,000
Change in Inventories of Finished Goods, Work-in-Progress		1,00,000	50,000
Other Expenses (% of Cost of Revenue from Operations)		20%	20%
Tax Rate		40%	40%

22 On the basis of the following information calculate any two of the following ratios: (4)

a) Operating Ratio; b) Liquid Ratio; c) Proprietary Ratio.

Information:

Cash Sales ₹ 4,00,000; Credit Sales ₹ 2,75,000; Sales Return ₹ 27,000; Cost of Revenue from operations ₹ 3,90,000; Selling and Distribution Expenses ₹ 7,000; Administration Expenses ₹ 3,000; Current Liabilities ₹ 1,95,000; Current Assets ₹ 3,94,000; Closing Inventory ₹ 23,000; Equity Share Capital ₹ 4,37,000; 6% Preference Share Capital ₹ 1,74,000; Fixed Assets ₹ 4,30,000.

23 (i) Calculate the amount of Opening and Closing Trade Receivables from the following :

Trade Receivables Turnover Ratio: 6 Times

Cost of Revenue from Operation ₹ 6,00,000

Gross Profit: 20% on Cost

Cash Revenue from Operation being 25% of total Revenue from Operation

Opening Trade Receivables were 1/4th of Closing Trade Receivables.

(ii) Following particulars are obtained from the books of Anand Ltd. as at 31st March,2016:

Particulars	₹
40,000 Equity shares of Rs. 10 each	4,00,000
12% Preference Share Capital	1,60,000
Reserves	50,000
Profit and Loss Balance (cr.)	2,00,000
15% Long term Borrowings	1,00,000
Long term Provisions	40,000

Net Profit for the current year after payment of Interest and Tax amounted to ₹ 2,04,000.

Tax rate is 40%. You are required to calculate Return on Investment. (3+3=6)

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DELHI PUBLIC SCHOOL, BHILAI (C.G.)

DATE : 23-09-2016 **FIRST TERMINAL EXAMINATION, 2016** **Time : 3 Hours**

CLASS : XII **COMPUTER SCIENCE (PYTHON)** **M.M : 70**

No. of Printed Pages : 3

General Instructions :

i) **All the questions are compulsory.**

ii) **Programming Language : Python.**

1. a) Out of the following, find those identifiers, which cannot be used for naming variables or functions in Pythons program : (2)
Total#Tax, for, Class, switch, 3rdrow, finally, row25

b) Differentiate between static binding and dynamic binding. (2)

c) What do you understand by Data Encapsulation and Data hiding? Also, give an example in Python to illustrate both. (2)

d) Name the Python library modules which need to be imported to invoke the following functions. (2)
(i) round() (ii) load() (iii) now() (iv) search()

e) Rewrite the following code after removing all syntax error(s). Underline each correction. (2)

```
S1, S2 =0
for x in range (0,11):
    num = int(("Enter the number"))
    (num>0)
        S1=S1+num
    else:
        S2=S2/num
print("%d%d"%(S1,S2))
```

f) Find and write the output of the following Python code: (2)

```
b=[4,6,7,4,5,12,11,10,8,17]
for i in range (1,3):
    for j in range(1,3):
        b[i]=4*i+j
        print(b[i])
```

g) How many times are the following loop extended? (2)

(i)
```
for a in range (100,10, –10):
        print(a)
```

(ii)
```
i=100
while(i<=200):
        print(i)
        i+=20
```

(iii)
```
i=4
while(i>=4):
        print(i)
        i+=10
```

(iv)
```
i=2
while(i<=25):
        print(i)
```

h) What will be the output of the following code? (3)

```
class Contact:
    all_contact = []
    def__init__(self, name, email):
      em=[]
      em.append(name)
      em.append(email)
      Contact.all_contact.append(em)
      print(Contact.all_contact)
      print(self.all_contact)
MyID=Contact("Amit Kulkarni", "Amit2008@gmail.com")
```

i) Which string method is used to implement the following : (2)

(i) To count the number of characters in string.

(ii) To change the first character of the string in capital letter.

(iii) To check whether given character is a letter or a number.

(iv) To change lower case to upper case.

j) What are the possible outcome(s) executed from the following code? (2)

Also specify the maximum and minimum values that can be assigned to variable COUNT.

```
TEXT="CBSEONLINE"
COUNT=random.randint(0,3)
c=9
while TEXT[c]!='L':
 print TEXT[c]+TEXT[COUNT]+'*',
 COUNT=COUNT+1
 C=C-1
```

(i) EC*NB*IS*

(ii) NS*IE*LO*

(iii) ES*NE*IO*

(iv) LE*NO*ON*

2. a) How is __ init__() different from __del()__ (2)

b) Differentiate between Static and Dynamic binding with example. (2)

c) State the benefits of static method in Python class. (2)

d) Name the method that can be used to : (2)

i) access attribute of an object

ii) delete an attribute of an object

iii) check whether the attribute str exists in the class Test whose object in T1.

iv) Assign a value "Hello" to the attribute str of Class Test and object T1.

e) Define a class CABS in Python with the following specification

Instance attributes : (4)

- CNo – To store cab number
- Type – To store a character 'A', 'B' or 'C' as city Type
- PKM – To store per kilo meter charges
- Dist – To store distance travelled in (KM)

Class Methods :

- A constructor function to initialize CNo as 1111, Type as 'A', PKM and Dist as 0 (zero).
- A function charges () is to assign PKM as per the following table:

Type	PKM
A	25
B	20
C	15

- A function Register() is allow to enter the values of CNo and Type. Also call charges() to assign PKM charges.
- A function ShowCabs() is allow user to enter value of distance travelled Dist and display CNo, Type, PKM and PKM*Dist (as Amount) on screen.

3. a) Illustrate the concept of Inheritance with the help of a Python code. (2)

b) Explain the significance of super() function with example. (2)

c) Rewrite the following code after removing errors. Underline each correction and write the output after correcting the code : (3)

```
class First() :
  def__init__(self):
     print("first"):
```

```
class Second(object) :
    def __init__(self):
        print("second")
class Third(First, Second) :
    def __init__(self):
        First.__init__(self):
        Second.__init__(self)
        print("that's it")
t=Third()
```

d) What will be the output of the following program coded (2)

```
class A :
  x1=x2=0
  def __init__(self):
      print("Base Class A")
      self.x1=8
      self.x2=7
class B(A) :
  y=0
  def __init__(self):
     A.__init__(self)
     print("Derived Class B")
obj=B()
```

4. a) Explain the use of output functions write() and writelines() with an example. (2)

b) Write appropriate python statement to do the following : (1)

(i) To open a file name "EMP.DAT" for read and write together.

(ii) To go to the 20th byte in a file.

c) Write a method in python to read the content from a text file story.txt line by line and display the same on screen. (2)

d) Write a function to count the words "this" and "these" present in a text file "ARTICLE.TXT". (2)

e) Consider the following definition of class Student. Write a method in Python to write the content in a pickled file 'student.dat' (3)

```
class Student :
        def __init__(self, A, N) :
                self.Admno = A
                self.Name = N
        def show(self) :
                print (self.Admnno, '#', self.Name)
```

f) Write a program to print Fibonacci series by using generator. (3)

5. a) What do you understand by the term candidate key and cardinality of a relation in a relational database? (2)

b) What are composite keys and primary key in a table? Give a suitable example to explain it. (2)

c) What is the difference between CREATE VIEW and CREATE TABLE commands? (2)

d) What are DDL and DML commands? Give example. (1)

e) Consider the following DEPT and EMPLOYEE tables. Write SQL queries for (i) to (iv) and find outputs for SQL queries (V) to (VIII). (8)

TABLE : DEPT

DCODE	DEPARTMENT	LOCATION
D01	INFRASTRUCTURE	DELHI
D02	MARKETING	DELHI
D03	MEDIA	MUMBAI
D04	FINANCE	KOLKATA
D05	HUMAN RESOURCE	MUMBAI

TABLE : EMPLOYEE

ENO	NAME	DOJ	DOB	GENDER	DCODE
1001	George K	2013-09-02	1991-09-01	MALE	D01
1002	Ryma Sen	2012-12-11	1990-12-15	FEMALE	D03
1003	Mohitesh	2013-02-03	1987-09-04	MALE	D05
1007	Anil Jha	2014-01-17	1984-10-19	MALE	D04
1004	Manila Sahai	2012-12-09	1986-11-14	FEMALE	D01
1005	R Sahai	2013-11-18	1987-03-31	MALE	D02
1006	Jaya Priya	2014-06-09	1985-06-23	FEMALE	D05

i) To display ENO, NAME. GENDER from the table EMPLOYEE in ascending order of ENO.

ii) To display the name of all the MALE employees from the table EMPLOYEE.

iii) To display the ENO and NAME of those employees from the table EMPLOYEE who are born between '1987-01-01' and '1991-12-01'.

iv) To count and display FEMALE employees who have joined after '1986-01-01'

v) SELECT COUNT(*), DCODE FROM EMPLOYEE
GROUP BY DECODE HAVING COUNT(*)>1;

vi) SELECT DISTINCT DEPARTMENT FROM DEPT;

vii) SELECT NAME, DEPARTMENT FROM EMPLOYEE E,
DEPT D WHERE E.DCODE=D.DCODE and ENO<1003,

viii) SELECT MAX(DOJ), MIN(DOB) FROM EMPLOYEE;

DELHI PUBLIC SCHOOL, BHILAI (C.G.)

DATE : 21-09-2016 FIRST TERMINAL EXAMINATION – 2016 TIME : 3 HOURS

CLASS : XII BUSINESS STUDIES M. M. : 80

No. of Printed Pages : 2

General Instructions:

(i) Answers to questions carrying 1 mark may be from one word to one sentence.

(ii) Answers to questions carrying 3 marks may be from 50-75 words.

(iii) Answers to questions carrying 4-5 marks each may be about 150 words.

(iv) Answers to questions carrying 6 marks may be about 200 words.

(v) Attempt all parts of a question together.

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1. Name the principle of management that prevents overlapping of working of two divisions. (1)
2. The Government of India has allowed oil marketing public sector undertakings to fix their own price for petrol and diesel. Which economic reform is the reason of this change in government's policy? (1)
3. These are the steps to be carried out within a broad policy framework. Name the type of plan. (1)
4. Why is it easy to fix responsibility in formal organisation? (1)
5. Alliance Ltd. is engaged in manufacturing plastic buckets. The objective of the company is to manufacture 100 buckets a day. To achieve this, the efforts of all departments are coordinated and interlinked and authority-responsibility relationship is established among various job positions. There is clarity on who is to report to whom. Name the function of management discussed here. (1)
6. Name the technique of scientific management which helps in eliminating unnecessary diversity of products and thus results in saving cost. (1)
7. Define 'Centralisation of Authority'. (1)
8. Which test helps the organisation to know about the qualities and the moral values of the candidates? (1)
9. What is meant by 'Business Environment'? Explain 'Dynamic nature' and 'Uncertainty' as feature of Business Environment. (3)
10. Explain any three advantages of planning. (3)
11. Zenith Ltd. is a highly reputed company and many people wanted to join this company. The employees of this organisation are very happy and they discussed how they came in contact with this organisation.
    Harsh said that he was introduced by the present Sales Manager, Mr. Deepak.
    Anand said that he had applied through the newspaper and was appointed as HR Manager.
    Rajat said that he was neither related to any of the employees of the organisation nor there was any advertisement in the newspaper even then he was directly called from IIM Ahmedabad from where he was about to complete his MBA.
    (a) The above discussion is indicating an important function of management. Name the function of management.
    (b) The management function identified in part (a) follows a particular process. Explain the step of this process which is being discussed in the above Para. (3)
12. Shubhi is working in a company on a permanent basis. As per the job agreement, she had to work for 8 hours a day and was free to work overtime. Shubhi worked overtime, due to which she fell ill and had to take leave from her work. No one showed concern and enquired about her health. She realised that she was fulfilling only some of her needs while some other needs still remained to be fulfilled.
    (i) By quoting the lines from the above Para, identify the needs of Shubhi which she is able to fulfill.
    (ii) Also, explain two other needs of Shubhi followed by the above needs, which still remained to be satisfied. (3)
13. Ramesh was working in the production department of a textile company. One day, he had an opportunity to meet the marketing manager of the company. They talked about the latest fashion preferences of the customers in the market. The marketing manager also suggested some ways to capture the untapped market modifying the production pattern.
    (i) Name the type of formal communication in which persons of two departments, one at a higher position and another at a lower, communicate with each other.
    (ii) State the problem which may arise in this type of communication.
    (iii) Which principle is violated in such a situation? (3)
14. "There is a close and reciprocal relationship between planning and controlling." Explain the statement. (4)
15. What do you mean by 'Leadership'? Explain the different types of leadership styles. (4)
16. Preksha runs a factory wherein she manufactures shoes. The business has been doing well and she intends to expand by diversifying into leather bags as well as western formal wear thereby making her company a complete provider of corporate wear. This will enable her to market her business unit as a one-stop shop for working women. What type of organisational structure would you recommend for her expanded organisation and why? (4)

17. My Car Ltd. is a cab company running petrol and diesel taxis in Delhi and NCR. To control the pollution, a ruling was passed in the year 1998 to convert all commercial vehicles into CNG.
Soon, after the ruling the company sold off its diesel cars and converted petrol cars into CNG.
Delhi Government introduced the scheme of 'odd even' car in January, 2016. Later in the year, Supreme Court passed the verdict that only CNG commercial vehicles could ply in Delhi and NCR. The company started earning huge profits while its competitors ran out of business.
(a) Identify the dimension of the business environment discussed in the above case.
(b) State two reasons why the profits of the company surged?
(c) State two values which company wants to communicate to the society. (4)

18. ABC Ltd. is engaged in producing electricity from domestic garbage. There is almost equal division of work and responsibility between workers and management. The management even takes workers into confidence before taking important decisions. All the workers are satisfied as the behaviour of the management is very good.
(i) State and explain the principle of scientific management described in the above Para.
(ii) Identify any two values which the company wants to communicate to the society. (4)

19. Fresh Air Electricals Ltd. is a company engaged in the business of manufacturing of air conditioners. The company produces five-star BIS (Bureau of Indian Standards) rating air-conditioners, which are not only energy efficient but also pollution free. The company perceives the increasing temperature of Delhi as an opportunity. In order to capture market share, the company directed its employees to work overtime. To tackle shortage of workforce, the workers of the assembling departments are also asked to make delivery of the air-conditioners. However, due to long working hours, the efficiency level of the employees decreased. The workers started having feeling of being exploited, as they are not duly compensated for their work. The workers are also becoming indisciplined. The spirit of teamwork, which is characterised the company previously, has begun to disappear.
Identify any four principles of management, which are being violated by the company. Support your answer by quoting the line from the above case. (4)

20. Juicy-Jag Private Limited is a company engaged in the business of manufacturing beverages. In the month of March, Abhinav, the manager of Juicy-Jag Private Limited plans to bring out a new drink for the summer season. He distributed free samples of the new launch and got the feedback from the customers. The feedback report clearly indicated that customers have preference for mango flavour over strawberry flavour and jamun flavour over imli. Accordingly, the production was adjusted and the marketing department prepared their promotional and advertising campaigns. As per the sales performance report, Abhinav, further, modified his production plans.
(a) Identify and explain the concept of management highlighted in the present case.
(b) State any three characteristics of the concept identified in the above Para. (5)

21. Socio-Connect Private Limited is a mobile manufacturing company. The manager of the company observed that the market is dynamic and a lot of changes were taking place in the mobile market and hence, the risk of the product becoming obsolete is high. The design of the phones is governed by requirements and preferences of the customers. He started incorporating new and advanced features taking cue from the consumers and with the help of his workers.
(a) By quoting the line from the above Para, identify and explain the characteristic of management highlighted in this case.
(b) Give any two benefits of making these changes in the business. (5)

22. Distinguish between 'Delegation' and 'Decentralisation' on the basis of the following:
(i) Meaning, (ii) Purpose, (iii) Scope, (iv) Status, and (v) Nature. (5)

23. A company is manufacturing garments. The manager wants to increase profit by
- Purchasing new high speed machines, or
- Increasing the sale price, or
- Using waste material in manufacturing stuffed toys.

He decided that 'using waste material' to increase the profit is the best solution for him.
(a) Identify the concept of management involved.
(b) Mention the steps involved in the above process by quoting the lines from the question.
(c) To complete the process of the concept identified in (a), what further steps does the manager have to take. (6)

24. "Training is life-long necessity both for the employees as well as for the organisation." Explain any three arguments each in favour of the employees and the organisation. (6)

25. Rohit is appointed as a Factory Manager in a shower-gel manufacturing company. He is given a target of producing one lakh shower-gel per month. He knows the "essence of management is to achieve the desired results" but does not know "how to ensure that the work goes on according to plans."
Guide him by explaining the process so that he is able to achieve the desired results. (6)

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DELHI PUBLIC SCHOOL, BHILAI (C.G.)

DATE : 23-09-2016 | FIRST TERM EXAMINATION, 2016 | Time : 3 Hours

CLASS : XII | ECONOMICS | M.M : 100

No. of Pages Printed : 2

General Instructions –

1. All the questions in both the sections are compulsory.
2. Marks for questions are indicated against each question.
3. 1 mark questions are required to be answered in one sentence.
4. 3 marks questions are required to be answered in about 60 words.
5. 4 marks questions are required to be answered in about 70 words.
6. 6 marks questions are required to be answered in about 100 words. No limit for numerical questions.

SECTION A (Micro economics)

1) PP Curve shift outward when- 1

a) Population of a country increases b) Technology becomes obsolete

c) There is massive unemployment d) Resources increases or technology is upgraded

2) The consumer attain equilibrium at a point where budget line- 1

a) Is tangent to an indifference curve b) Intersects the indifference curve

c) Is above the indifference curve d) Is below the indifference curve

3) When the demand curve of a product shifts leftward, it indicates a situation of- 1

a) Contraction in demand b) Decrease in demand

c) Increase in demand d) Expansion in demand

4) The shape of MU curve is- 1

a) Upward sloping b) Downward sloping c) Concave to the origin d) Straight line

5) Relationship between physical inputs and physical outputs is called- 1

a) Cost function b) Revenue function c) Production function d) Technical function

6) "Economics is about making choice in the presence of scarcity". Comment. 3

7) What price a consumer is ready to pay for a commodity in state of equilibrium? Discuss. 3

8) Distinguished between fixed cost and variable cost. Give two example of each. 3

9) Discuss any three assumptions of PP curve. When will PP curve be a straight line, concave and convex to the origin? 4

10) "An economy always produces on, but not inside, a PPF, Defend or refute (use diagram) 4

11) What do you mean by explicit cost? Calculate MC and TC from the following cost schedule of a firm whose total fixed cost is ₹ 15- 4

Output (units)	1	2	3	4
Total variable cost	10	19	29	40

OR

Define cost function. A firm is producing 20 units. At that level of output, ATC and AVC are respectively equal to ₹ 40 and ₹ 37. Find out the total fixed cost of the firm.

12) Complete the following table- 4

Units of labour	0	1	2	3	4	5	6
TPP	0	20	-	-	88	-	-
MPP	-	-	22	-	-	17	-
APP	0	-	-	22	-	-	20

13) A consumer consumes only two goods. What are the conditions of consumer's equilibrium in the utility approach? Explain the changes that will take place when consumer is not in equilibrium. 6

OR

(i) Whether demand for water is elastic or inelastic. Give reason.

(ii) A 3% fall in price of X leads to a 9% rise in demand. A 5% rise in the price of Y leads to a 5% fall in demand. Calculate price elasticity of demand of X and Y and compare them.

14) Explain the causes of decrease in demand and contraction of demand. Use diagram. 6

15) Explain any three factors which determine price elasticity of demand. The price elasticity of demand of good X and Y are in ratio 1: 3. A 10 % rise in the price of good X results in a fall in its demand from 500 to 400 units. Calculate the percentage change in the quantity demanded of good Y when its price falls from ₹ 10 to ₹ 8 per units. 6

16) To increase the production of a good, only one input is increased while the other inputs are held constant. Explain its effects on total physical product. Give reasons. Use schedule and diagram. 6

17) Draw ATC and AVC and MC in a single diagram. Explain the relation between MC and ATC with its help. 6

PTO

SECTION –B [MACROECONOMICS]

18) A growing country is one whose- 1

I) GNP is rising at current prices II) GNP is constant at constant prices

III) GNP is rising at constant prices IV) None of these

19) The sum of net value added at Fc of all the producing units in domestic territory gives - 1
I) GDP at MP II) GDP at FC III) NDP at MP IV) NDP at FC

20) To reduce the supply of money in the economy, central bank- 1

I) Raises CRR II) Lower the Repo rate

III) Decreases margin requirement IV) Buys govt. securities from the market

21) State whether money supply is a stock variable or flow variable. 1

22) Describe the medium of exchange and standard of deferred payment functions of money. 3

23) Explain 'banker to government' function of central bank. 3

24) Write down any three limitations of using GDP as an index of welfare of a country. 3

25) How money flows are opposite to real flows? Discuss. 3

26) Excess money supply is necessary for economic development but it also creates inflationary situation. Discuss any two monetary measures to control inflationary situation. 4

27) What causes increase in inventory stock? Are inventory and change in inventory is stock variable or flow variable? Give reasons. 4

OR

Sale of Petrol and diesel cars is rising particularly in big cities. Analyze its impact on gross domestic product and welfare.

28) Calculate the value added by firm A and Firm B from the following data- 4

I. Sales by firm A to firm B.....50
II. Purchases by firm C from Firm B..... 30
III. Purchases by Firm A From firm C..... 35
IV. Sales by firm A to government..... 10
V. Exports by firm B.....10
VI. Sales by firm B to Firm D..... 25
VII. Imports by firm B-..... 5
VIII. Change in stock of firm A..... 10
IX. Change in stock of firm B..... 5

29) How are the following treated in estimation of Domestic income? Give reasons in support of your answer- 6

I. Pension on retirement.
II. Remittances from non-resident Indians to their families in India.
III. Profit earn by a branch of state bank of India in Japan.
IV. Consultancy fees paid to a foreign expert.

30) From the following data, calculate - 6

a) Personal Disposable Income

b) National Income

I. Private income-.....3000
II. Compensation of employees- 800
III. Mixed income of self-employed-.....900
IV. Net factor income from abroad- ..... (-50)
V. Net retained earnings of private enterprises-..... 600
VI. Rent-.....350
VII. Profit-..... 600
VIII. Consumption of fixed capital-..... 200
IX. Direct taxes paid by household-..... 300
X. Corporation tax-..... 350
XI. Net indirect taxes-..... 250
XII. Net exports- ..... (-70)
XIII. Interest-..... .450

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DELHI PUBLIC SCHOOL, BHILAI (C.G.)

DATE : 23-09-2016 | FIRST TERMINAL EXAMINATION, 2016 | Time : 3 Hours

CLASS : XII | ENGINEERING GRAPHICS | M.M. : 70

No. of Printed Pages : 2

General Instructions :

i) **Attempt all the questions.**
ii) **Follow the S.P. 46 – 2003 revised codes (with first angle method of projection)**
iii) **Missing and mismatching dimensions, if any, may be suitably assumed.**
iv) **All dimensions are in millimetres.**
v) **Use the given dimensions in the figure.**

1. **Answer the following multiple choice questions. Print the correct choice on your drawing sheet.** **(1×5=5)**

   i) The ratio of the isometric length to the true length is

      a) 3:2 b) 0.816:1 c) 0.92:1 d) 1:2

   ii) Which solid will be generated by the revolution of a rectangle ABCD about one of its side AD.

      a) Cylinder b) Prism c) Cone d) Pyramid

   iii) The end of the stud, which is screwed in the body of a casting is called

      a) External Thread b) Bolt end c) Nut end d) Metal end

   iv) The taper on a rectangular sunk key is taken as

      a) 1:30 b) 1:150 c) 1:100 d) 1:50

   v) What is the thread angle of a metric thread (Internal).

      a) 55° b) 65° c) 45° d) 60°

2. i) Construct an Isometric scale of length 100 mm. (4)

   ii) Construct the Isometric Projection of a frustum of a hexagonal pyramid, base side = 30 mm, top side = 25 mm, and height of axis = 70 mm, resting on H.P. on its base, with one of the base side parallel to V.P. and the axis is perpendicular to H.P. Draw the axis and indicate the direction of viewing. Give all dimensions. (7)

   iii) An equilateral triangular prism slab, with a base side of 90 mm and height of axis 40 mm, is resting on H.P, on one of its triangular ends, with one of its base sides parallel to V.P & away from it. A Hemisphere of 70 mm diameter is centrally placed on the top triangular end of the slab, with its curved surface on it. Draw the isometric projection of the two sides, placed together, showing their common vertical axis. Indicate the direction of viewing. Give all dimensions. (12)

3. i) Draw to full size scale the Front View & Top View of a square nut of diameter 25 mm, keeping its axis vertical with the diagonal on the square face parallel to V.P. (8)

   (OR)

   Draw to scale 1:1 the standard profile of a BSW thread, taking enlarged pitch = 50 mm. Give standard dimensions.

   ii) Sketch free hand the front view and top view of a cheese head screw of size M20. Keep the axis vertical. Give standard dimensions. (5)

   (OR)

   Sketch free hand the front view, R.H. side view & Top view of a double-head gib key for a shaft of diameter 60 mm. Give standard dimensions.

4 (a) Draw to scale 1:1, the front view, top view & side view of a hexagonal headed bolt of diameter 25 mm with hexagonal nut and washer, keeping the axis parallel to V.P. and H.P. (16)

   (b) Draw to scale 1:1, the top view and sectional front view of a single riveted lap joint, when thickness of plates to be joined = 16 mm. (13)

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DELHI PUBLIC SCHOOL, BHILAI

Max. Mark: 100 | **First Term Examination** | **September 2016**

Time: | **General Knowledge** | **Class: XII**

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(1) In which of the following states, is the Child Sex Ratio the lowest in India?

(a) Chhattisgarh (b) Bihar (c) Punjab (d) Haryana

(2) The monazite sands on the Kerala costs, used for generating nuclear energy contain

(a) Platinum (b) Copper (c) Uranium (d) bauxite

(3) Which state is the major producer of saffron?

(a) Kerala (b) Punjab (c) Jammu & Kashmir (d) Gujarat

(4) Growing of a crop after the failure of the main crop is called

(a) Cash crop (b) Cover crop (c) Catch crop (d) Trap crop

(5) The word 'budda' means

(a) a conqueror (b) a liberator (c) an enlightened one (d) an emporer

(6) Who among the following extended support to Khilafat Movement?

(a) A.O. Hume (b) Mohammed Ali Jinnah (c) Lord Curzon (d) Mahatma Gandhi

(7) The people of Indus Valley civilization worshipped

(a) Vishnu (b) Shiva (c) Brahma (d) Pashupati

(8) Who was the Viceroy at the time of Quit India Movement?

(a) Lord Wavell (b) Lord LinLithgow (c) Lord Irwin (d) Lord Mountbatten

(9) Which of the following ensures grass root democracy in India?

(a) Panchayati Raj (b) Inter-state Council (c) President (d) CAG

(10) Which of the following is not a Union Territory?

(a) Pondicherry (b) Nagaland (d) Daman and Diu (d) Lakshadeep

(11) Which of the following schemes will promote urban infrastructure?

(a) Swachh Bharat Abhiyan (b) Smart city scheme

(c) Bharat Nirman (d) Indira Awas Yojana

(12) Which one of the following pairs of power projects is not correctly matched?

(a) Ukai – Thermal Power (b) Papanasam -Hydro Power

(c) Kakrapar – Wind Power (d) Kaiga – Nuclear Power

(13) 'Gatiman Express' recently seen in news is/are

(a) The first bullet train being built with cooperation from Japan.

(b) India's fastest train so far.

(c) Train which will serve sea ports to hinter land connectivity.

(d) The first train in the north east to put Meghalaya on the railway map.

(14) Recently the world's, first solar-powered parliament was inaugurated in which of the following countries

(a) Israil (b) Pakistan (c) Malaysia (d) Japan

(15) Who introduced the 'Green Army' for environment conservation?

(a) Japan (b) China (c) Australia (d) Egypt

(16) Which of the following gases are released during coal fires? [Select the answer using the code given below]

(1) Oxides of Sulphur (2) Oxides of nitrogen (3) Carbon monoxide (4) Carbon dioxide

(a) 1, 3 and 4 (b) 2 and 3 (c) 1, and 4 (d) 1,2,3 and 4

(17) Which of the following is/are not mentioned in the classical language list.

(a) Kannada (b) Punjabi (c) Odiya (d) Malayalam

(18) 'NASA's, New Horizons mission has discovered which form of ice on Pluto surface?

(a) Methane Ice (b) Dry Ice (c) Nitrogen Ice (d) Water Ice

(19) If 1) 18 + 3 + 6 = 21 & 2) 21 + 9 + 4 = 26 then 24 + 3 + 8 = ?

(a) 27 (b) 29 (c) 24 (d) 22

(20) If MIKE is OGMC then CIAD is?

(a) AJCF (b) ENCG (c) EGCB (d) EICB

(21) Select the word from the following which cannot be formed using the letters of the given word ENVIRONMENT.

(a) EMINENT (b) ENTRANCE (c) MOVEMENT (d) ENTER

(22) Identify the pair which does not exhibit the same relationship as the captitalised pair

ETYMOLOGY : WORDS

(a) ANATOMY : BODY (b) PSYCHOLOGY : MIND

(c) ARCHEOLOGY : ANTIQUES (d) PHILOSOPHY : LANGUAGE

(23) Which one of the given responses would be a meaning full order of the following

(1) Crop (2) Root (3) Steam (4) Seed (5) Flower

a) 42351 b) 24513 c) 23415 d) 23514

(24) Identify which one of the given alternatives will be another member of the group of that class? Lucknow, Patna, Bhopal, Jaipur._____?

(a) Mysore (b) Shimla (c) Pune (d) Jaipur

(25) In certain code language 481 means sky is blue 246 means sea is deep and 698 means sea looks blue. Which number is the code for blue.

(a) 1 (b) 9 (c) 8 (d) 6

(26) Arrange these letters of each group to make a meaningful word and find the odd one out

(a) VEENS (b) GHIET (c) VIDEID (d) ORFU

(27) Cyanide poisoning causes deaths in seconds because

(a) It causes cardiac arrest (b) It break electron transport chain

(c) It denatures the enzymes of the heart muscle (d) It causes Lysis of red blood cells.

(28) When helium atom loses an electron it becomes

(a) A positive helum Ion (b) A proton

(c) A negative helium Ion (d) An alpha particle

(29) The name of the upper house of the Indian Parliament is

(a) Legislative Assembly (b) Rajya Sabha

(c) Senate (d) House of Lords

(30) Which of the following costs is related marginal cost

(a) Implicit cost (b) fixed cost (c) variable cost (d) prime cost

(31) Which was the first hydel power project in India?

(a) Paikara in Tamil Nadu (b) Palli Vasal in Kerala

(c) Shiva Samudram in Karnataka (d) Nizam nagar in Andra Pradesh

(32) GEF is a international aid-giving agency has the full form

(a) Global Educational Fund (b) Global Environmental Fund

(c) Global Economic Fund (d) Global Energy Fund

(33) State bank of India was previously known as

(a) Syndicate Bank (b) Co-operative Bank of India

(c) Imperial Bank of India (d) Canara Bank

(34) Out of the four alternatives choose the one which best expresses the meaning of DIMINISH

(a) Worsen (b) Shorten (c) Reduce (d) Prohibit

(35) Fill in the blanks with suitable alternatives out of the four

Ships are _____ by giant engines

(a) Sailed (b) driven (c) Pulled (d) dragged

(36) A number exceeds its two fifth by 75. Then the number is _____

(a) 125 (b) 150 (c) 112 (d) 100

(37) Out of four numbers the average of the first three is 16 and that of the last three is 15. If last number is 20 then the first number is

(a) 21 (b) 25 (c) 23 (d) 28

(38) A can do a work in 10 days and B in 20 days, If they together work on it for 5 days, then fraction of the work that is left in _____

(a) $\frac{3}{4}$ (b) $\frac{3}{20}$ (c) $\frac{4}{3}$ (d) $\frac{1}{4}$

(39) Which of the following is not a fundamental right?

(a) Right against exploitation (b) Equality before law

(c) Right to freedom of religion (d) Equal pay for equal work

(40) Who among the following also presides the session of Rajya Sabha as Chair Person?

(a) President (b) Vice President

(c) Prime Minister (d) Leader of opposition in the Rajya Sabha

(41) The main difference between Gross National product and Gross Domestic product is

(a) Capital consumption allowance (b) Capital gains

(c) Transfer payments (d) Net factor income from abroad

(42) Which of the following is Public Sector Undertaking

(a) Axis Bank (b) Hindustan Motors

(c) Indian Oil Corporation Ltd. (d) Ambuja Cement

(43) Which of the following terms is not associated with banking/finance?

(a) RTGS (b) SLR (c) Credit (d) None of the above

(44) Which among the following abbreviations stands for organization related to Indian space programme.

(a) NASA (b) ISO (c) ISRO (d) NSAT

(45) Which of the following is the world's largest river bridge?

(a) Howrah Bridge (b) Mahatma Gandhi Setu

(c) Farakka (d) Jawahar Setu

(46) The Brahmos, a short-range supersonic cruise missile, is a joint venture between which foreign country and Indian agency?

(a) USA & ISRO (b) UK & ISRO

(c) Russia & ISRO (D) Russia & DRDO

(47) Twelve persons meet in a conference and each shakes hands with all the others. How many hand shakes take place?

(a) 66 (b) 72 (c) 144 (d) 132

(48) A man travels uphill to city C from City B in a car at the speed of 40 km/hr, and return to city B at a faster speed of 60 km/hr. What is his average speed for the round trip?

(a) 0 (b) 48 km/hr (c) 70 km/hr (d) data insufficient

(49) What is the square root of 49%

(a) 0.7% (b) 7.0% (c) 70% (d) Undefined

(50) In a triangle ABC, one of the angles is average of the remaining angles. Which of the following is always true about the triangle ABC?

(a) Isosceles triangle (b) Equilateral triangle

(c) One of the angle measures 60^0 (e) Right Angle triangle

(51) How many states/countries are member of the United Nations?

(a) 192 (b) 193 (c) Less than 192 (d) More than 193

(52) The permanent secretariate of the SAARC was opened at

(a) Dhaka (b) New Delhi (c) Kathmandu (d) Colombo

(53) UN Day celebrated on

(a) October 24 (b) January 24 (c) June 24 (d) September 24

(54) In Alternating Current (AC), the direction and magnitude of the current varies

(a) Randomly (b) Periodically (c) Exponentially (d) Do not vary

(55) Albert Einstein received the Nobel Prize for Physics in the year 1921 for his work on

(a) Mass energy equivalence given by $E = mc^2$

(b) Hydrogen atom (c) Theory of relatively (d) Photo electric effect

(56) When light reflects from a surface there is a change in its

(a) Speed (b) Frequency (c) Wave length (d) None of the above

(57) Which of the following normally warm up faster when heat is applied?

(a) Water (b) Glass (c) Iron (d) Wood

(58) A substance can absorb heat energy by the process of

(a) Convection (b) radiation (c) conduction (d) All of the above

(59) Refraction of sound can occur in

(a) Water (b) Air (c) both (a) and (b) (d) neither a nor b

(60) A moving object on which no forces are acting will continue to move with constant

(a) Acceleration (b) Momentum (c) Impulse (d) All the above

(61) If SHARP is coded as 58034 and PUSH as 4658 then RUSH is coded as _____

(a) 4658 (b) 3658 (c) 6583 (d) 8546

(62) Sleeping sickness is caused by

(a) Protozoa (b) Virus (c) Bacillus (d) None of the above

(63) Of the following the only metal that is produced directly from its ore by an electrical process is

(a) Zirconium (b) Steel (c) Aluminum (d) Copper

(64) Which among the following is a regenerated fibre?

(a) Polythene (b) Tereline (c) Nylon (d) Rayon

(65) Stainless steel is an alloy of iron and _____.

(a) Copper (b) Chromium (c) Platinum (d) Strontium

(66) Evaporation of water is

(a) An exothermic change (b) An endothermic change

(c) A process in which no heat change takes place

(d) A process accompanied by a chemical reaction

(67) The heart of a human being

(a) Rest between beats (b) Rest during period of stress

(c) Never rests (d) Rest while you sleep

(68) After birth, it is believed that the body is no longer able to form

(a) Skin cell (b) Red blood cell (c) Bone cell (d) Nerve cell

(69) The age of rock which contains uranium ores is usually estimated by

(a) The total amount of radioactive substance in the rock (b) The radium content

(c) The lead content in the rock (d) A Geiger counter

(70) Bateria can possess any of the following traits expect

(a) a flagellum (b) the ability of exchange of genetic material with other organism

(c) a cell wall (d) mitochondria

(71) All the following are part of a prokaryotic cell expect

(a) DNA (b) a cell wall (c) ribosomes (d) an endoplasmic reticulum

(72) Chromosomes first become visible during which phase of mitosis?

(a) prometaphase (b) telophase (c) protophase (d) metaphase

(73) The abrasive in commercial powdered cleansers is often contain

(a) Silica (b) baking soda (c) Carbide (d) diamond dust

(74) Bronchitis is a disease of which of the following organ.

(a) Blood (b) Bladder (c) Liver (d) Respiratory track

(75) Which of the following is not a function category in Excel?

(a) Logical (b) Data series (c) Financial (d) Text

(76) To restart the computer the following combination of key are used

(a) Del + ctrl (b) Back space + ctrl (c) Esc + Ctrl (d) Ctrl+Alt+Del

(77) The term ODBC stands for

(a) Object Data Base communication. (b) Open Data Base connectivity

(c) Open Date Base communication (d) Object Data Base connectivity

(78) The main system board of a computer is called the

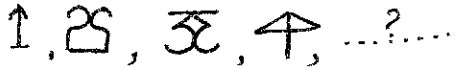
(a) Integrated circuit (b) Mother Board (c) Processor (d) Microchip

(79) Which of the following is an impact printer?

(a) Bubble-jet-printer (b) Laser printer

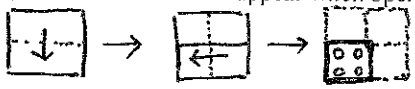
(c) Daisy wheel printer (d) Ink-jet printer

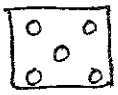
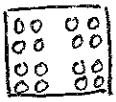
(80) The next term of the given series is



(a)  (b)  (c)  (d) 

(81) A piece of paper is folded and punched as shown below in the question figure. From the given answer figures indicate how it will appear when opened.



(a)  (b)  (c)  (d) 

(82) If – denotes +, + denotes × ÷ denotes – and × denotes ÷ then 81 × 3 ÷ 6 + 2 – 8 = ?

(a) 15 (b) 23 (c) 14.5 (d) 3.5

(83) If the following words are arranged in a dictionary order, which will be 3rd word?

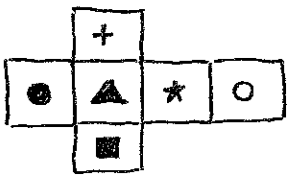
(a) Ambiguous (b) Amphibian (c) Amorphous (d) Ambivalent

(84) Complete the series and choose the correct alternative from the below

C4X , F9U, J16R, _____?_____

(a) L27P (b) K25P (c) L25O (d) L25U

(85) The Following figure is folded to form a cubical block. Which symbol will appear on the opposite of ▲



(a) + (b) ● (c) ○ (d) ■

(86) In the IIFA award ceremony held on June 3, 2016 the award for best film was for

(a) Bajirao Mastani (b) Piku (c) Dum Laga Ki Haisha (d) Bajrangi Bhaijaan

(87) Military aviation made a history on June 1, 2016 by inducting the indigenously made light combat air craft. What is the name of this air craft.

(a) MIG-21 (b) Mirage-2000 (c) Tejas (d) Trishul

(88) Who has sworn in as the Chief Minister of Puducherry on June 6, 2016.

(a) Sri M. Kandaswamy (b) Sri R. Kamala Kannan

(c) Sri V. Narayana Swamy (d) Ms. Kiran Bedi

(89) Who among the following was not inducted by IAF on June 18, 2016 as women fighter pilots for the first time in the history.

(a) Bhavana Kanth (b) Supriya Sahu

(c) Avani Chaturvedi (d) Mohana Singh

(90) In the Shanghai International Film Festival held from June 11 to June 14, 2016 an Indian film by name THITHI won two awards in Best film and best script writer category. In which language was this film made?

(a) Tamil (b) Malayalam (c) Telgu (d) Kannada

(91) Which one of the following is the underground mechanized coal mines of the state?

(a) Sohagpur (b) Raipur (c) Korba (d) Manikpur

(92) At which of the following rivers is Chitrakot dam situated?

(a) EB (b) Indravati (c) Shivnath (d) Jonk

(93) The only Jute industry of Chhattisgarh is located in which of the following districts?

(a) Raigarh (b) Korea (c) Jashpoor (d) Raipur

(94) Export of Iron ore from Bastar is done from which of the following sea ports?

(a) Chennai (b) Vishakapatnam (c) Cochin (d) Mumbai

(95) Where is the first Bio-Reserve park of Asia located?

(a) Sarguja (b) Raigarh (c) Kanker (d) Raipur

(96) Chief Minister Dr. Raman Singh announced a project for Mobile and Internet connectivity in Baster region on 15th August. 2016. What is the name of the project.

(a) Baster Digital Highway project (b) Baster net project

(c) Baster ring net work project (c) None of the above

(97) Usain Bolt wins men's 100 m final at Rio 2016 by clocking _____ glorious seconds

(a) 9.79 s (b) 9.81 s (c) 9.80 s (d) 9.89 s

(98) Match the newly appointed Governors with the State to which they are appointed.

(a)	Najma Heptulla	(i)	Punjab
(b)	V.P. Singh Badnore	(ii)	Manipur
(c)	Banwarilal Purohit	(iii)	Andaman Nicobar
(d)	Prof. Jagdish Mukhi	(iv)	Assam

a) A-(ii), B-(i), C-(iv), D(iii)

b) A-(iii), B-(ii), C-(i), D(iv)

c) A-(iv), B-(iii), C-(ii), D(i)

d) A-(i), B-(iv), C-(iii), D(ii)

(99) Who is the first lady IPS Officer from Chhattisgarh to receive police medal from Dr. Raman Singh on the eve of 70th Independence Day.

(a) Sakshi K. Mishra (b) Seema M. Mishra

(c) Sonal V. Mishra (d) Rinki S. Mishra

(100) Who among the following were recommended for the prestigious Rajeev Gandhi Khel Ratana Award?

(a) Jitu Rai (ii) Vinesh Phogat

(iii) Dipa Karmakar (iv) Sakshi Malik

(a) (i) and iv) (b) (i) and (iii) (c) (iii) and (iv) (d) (ii) and (iv)

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