Despite their similarities, these cities are different. Life in Xela is more colorful, and the pace of life is slower. For this reason, whenever I return to Xela, it is like an escape. When I arrive, the first thing I notice is the color. In New York, many people wear black to be stylish, but in Xela stylish clothing is the rainbow-colored clothing of the indigenous people. And because Xela is smaller, the beautiful green mountains outside the city are always visible. The second thing I notice is the pace of life. They say New York never sleeps, and it must be true, because I always see people walking and cars on the streets, even late at night.

**Questions:**

11. New York City and —— are the two places that have profound impact on the narrator's life.
    a. Central Park b. Guatemala
    c. The Big Apple d. Sheyla
12. The narrator has —— to both of the cities.
    a. positive attitude b. irritation
    c. no connection d. dramatically different feelings
13. What is the nick name of Quetzaltenango ?
    a. New city b. Sheyla c. Xela d. Guatemala
14. —— is his home city.
    a. New York b. Xela
    c. The Big Apple d. Central Park
15. Central Park in Xela is —— than that in New York.
    a. bigger b. more beautiful c. older d. smaller
16. New York and Xela are smilar in ——
    a. colours b. conservations c. pace of life d. food habits
17. The pace of life in Xela —— than in New York.
    a. smaller b. slower c. faster d. larger
18. In New York many people prefer —— to be stylish.
    a. black b. white
    c. blue d. rainbow-coloured clothing
19. It is said New York ——
    a. sleeps b. never sleeps
    c. shines d. never shines
20. This is an example of —— essay.
    a. narrative b. opinion
    c. descriptive d. comparison-contrast

## 3. Calculus (Math. Ed. 417)

### Exam. 2073

**Time : 3 hrs.** **Full Marks : 100**

**Attempt ALL the questions.**

**Group "B"** **8×7=56**

1. If $y = \cos(m \sin^{-1}x)$, prove that
   a. $(1 - x^2)y_2 - xy_1 + m^2y = 0$ and
   b. $(1 - x^2)y_{n+2} - (2n + 1)xy_{n+1} + (m^2 - n^2)y_n = 0$

2. State Rolle's theorem. Verify this theorem for the function $f(x) = x^2 - 6x + 8$ in the interval [2, 4].

   OR

   Expand $e^x$ in infinite series stating the condition under which it is valid.

3. If $x = r\cos\theta$ and $y = r\sin\theta$, prove that $\frac{\partial^2 r}{\partial x^2} + \frac{\partial^2 r}{\partial y^2} = \frac{1}{r}\left[\left(\frac{\partial r}{\partial x}\right)^2 + \left(\frac{\partial r}{\partial y}\right)^2\right]$.

4. Show that the semi vertical angle of the cone of maximum volume and given slant height is $\tan^{-1}\sqrt{2}$.

   OR

   Discuss maxima or minima of the function $f(x, y) = x^3 + y^3 + 6xy$. Also find the maximum and minimum values.

5. Show that the curve $\left(\frac{x}{a}\right)^n + \left(\frac{y}{b}\right)^n = 2$ touches the straight line $\frac{x}{a} + \frac{y}{b} = 1$ at the point (a, b) whatever may be the value of n.

6. (a) Using properties of define integral,
   show that $\int_0^{\pi} xf(\sin x)\,dx = \frac{\pi}{2}\int_0^{\pi} f(\sin x)\,dx$.

   (b) Evaluate the improper integral $\int_0^1 \log x\,dx$.

7. Define gamma function and prove that $\int_0^a x^2(a^2 - x^2)^{3/2}\,dx = \frac{\pi a^6}{32}$.

8. Find the area of the loop of the curve $ay^2 = x^2(a - x)$.

   OR

   Find the length of the arc of the parabola $x^2 = 4ay$ measured from the vertex to one extremity of the latus rectum.

**Group "C"** **2×12=24**

9. (a) Find the radius of curvature of the curve $y = a \log \sec \frac{x}{a}$.

   (b) Find all asymptotes of the curve $x(x^2 + y^2) = a(x^2 - y^2)$.

   OR

   (a) Discuss the properties and sketch the curve $\frac{a^2}{x^2} - \frac{b^2}{y^2} = 1$.

   (b) Find the envelope of the family of straight lines $x\,\mathrm{cosec}\theta - y\cot\theta = c$, where $\theta$ is a parameter.

10. Solve : (a) $(x^2 + 2xy^2)\,dx + (2x^2y + y^2)\,dy = 0$.
    (b) $xy^2(p^2 + 2) = 2py^3 + x^3$.

## Group "A" 20

**Attempt All the questions. Tick (√) the best answers.**

1. The function $f(x) = |x - 1|$ at $x = 1$ is
   a. continuous and differentiable
   b. continuous but not differentiable
   c. differentiable but not continuous
   d. neither continuous nor differentiable

2. Which of the following is the $n^{th}$ derivative of $\sin(ax + b)$ ?
   a. $a \sin\left(n\frac{\pi}{2} + ax + b\right)$ b. $a^n \sin\left(\frac{\pi}{2} + ax + b\right)$
   c. $a^n \sin\left(\frac{n\pi}{2} + ax + b\right)$ d. $\sin\left(\frac{n\pi}{2} + ax + b\right)$

3. Which of the following is the Cauchy's form of remainder $R_n$ in Taylor's series ?
   a. $\frac{h^n}{n!} f^n(a + \theta h)$
   b. $\frac{x^n}{n!} f^n(n + \theta h)$
   c. $\frac{h^n}{n!}(1 - \theta)^{n-1} f^n(a + \theta h)$
   d. $\frac{h^n}{(n-1)!}(1 - \theta)^{n-1} f^n(a + \theta h)$

4. What is the limiting value of $\frac{(1+x)^n - 1}{x}$ as $x \to 0$ ?
   a. n b. 1 c. n – 1 d. 0

5. If $u = f(x, y)$ be a continuous function of two independent variables x and y then total differential of u is given by
   a. $du = \frac{\partial u}{\partial x} + \frac{\partial u}{\partial y}$ b. $du = \frac{\partial u}{\partial x} dx + \frac{\partial u}{\partial y} dy$
   c. $du = dx + dy$ d. $du = x\frac{\partial u}{\partial x} + y\frac{\partial u}{\partial y}$

6. For the Cartesian curve $y = f(x)$, which of the following gives the length of normal ?
   a. $y_1\sqrt{1 + y^2}$ b. $yy_1$
   c. $\frac{y}{y_1}\sqrt{1 + y_1^2}$ d. $y\sqrt{1 + y_1^2}$

7. Which of the following is the necessary condition for $f(x)$ to have an extreme value at $x = c$ ?
   a. $f'(c) < 0$ b. $f'(c) > 0$ c. $f'(c) = 0$ d. $f''(c) = 0$

8. Which of the following gives the radius of curvature for the tangential polar curve $p = f(\Psi)$?
   a. $p + \frac{d^2p}{d\Psi^2}$ b. $p + \frac{dp}{d\Psi}$ c. $\frac{d^2p}{d\Psi^2}$ d. $p^2 + \frac{d^2p}{d\Psi^2}$

9. Which of the following represents asymptotes to the curve $(x^2 + y^2)\,x - ay^2 = 0$ ?

a. $x = \pm a$ b. $x = a$ c. $x + a = 0$ d. $x = 0, x = a$

10. The curve $x^2 = y^2(a - y)$ is symmetric to .....

a. $y = x$ b. $y = -x$ c. $x = 0$ d. $y = 0$

11. The envelope of the family of straight lines $x\cos\alpha + y\sin\alpha = a$ with parameter $\alpha$ is given by .....

a. $x^2 + y^2 = a^2$ b. $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$ c. $y^2 = 4ax$ d. $x^2 - y^2 = a^2$

12. For $a \neq 0$, the value of the integral $\int \frac{dx}{x^2 + a^2}$ is

a. $\tan^{-1}\frac{x}{a}$ b. $\frac{1}{2a}\tan^{-1}\frac{x}{a}$

c. $\frac{1}{a}\tan^{-1}\frac{a}{x}$ d. $\frac{1}{a}\tan^{-1}\frac{x}{a}$

13. What is the value of the definite integral $\int_a^b e^x\,dx$ ?

a. 0 b. $e^a$ c. $e^b - e^a$ d. $e^n - e^b$

14. Which of the following is not true ?

a. $\beta(m, n) = \beta(n, m)$ b. $\Gamma(n + 1) = n$

c. $\beta(m, n) = \frac{\Gamma(m)\,\Gamma(n)}{\Gamma(m + n)}$ d. $\Gamma(1) = 1$

15. What does the curve $x^{2/3} + y^{2/3} = a^{2/3}$ represent ?

a. Asteroid b. Strophoid

c. Folium of Descartes d. Circle

16. What are the area of the ellipse represented by $16x^2 + 9y^2 = 144$ ?

a. $3\pi$ sq. units b. $4\pi$ sq. units

c. $12\pi$ sq. units d. $24\pi$ sq. units

17. The length of an arc of the curve $y = f(x)$ from $x = a$ to $x = b$ is given by

a. $\int_b^a \sqrt{1 + \left(\frac{dy}{dx}\right)^2}$ b. $\int_a^b \sqrt{1 + \left(\frac{dy}{dx}\right)^2}\,dx$

c. $\int_a^b \sqrt{1 + \frac{dy}{dx}}\,.\,dx$ d. $\int_b^a \sqrt{1 + \left(\frac{dx}{dy}\right)^2}$

18. If the circle $x^2 + y^2 = a^2$ be revolved round x - axis, what would be the area of surface so generated ?

a. $\pi a^2$ b. $2\pi a^2$ c. $3\pi a^2$ d. $4\pi a^2$

19. What is the integrating factor of the differential equation $(1 + x^2)\frac{dy}{dx} + 2xy = 4x^2$?

a. $1 + x^2$ b. $\log(1 + x^2)$ c. $\frac{1}{1 + x^2}$ d. $\frac{1}{1 + x}$

20. What is the general solution of the differential equation $(D^2 - 4D + 4)\, y = 0$ ?

a. $y = (c_1 + c_2x)e^x$ b. $y = (c_1 + c_2x)e^{2x}$

c. $y = (c_1 + c_2)e^x$ d. $y = (c_1 + c_2)e^{2x}$

## 4. Foundation of Physical Education (HP. Ed. 417)

### Exam. 2073

**Time : $1\frac{1}{2}$ hrs.** **Full Marks : 50**

**Attempt ALL the questions.**

**Group "B"** **4×7=28**

1. Define physical education in your own words.

OR

What are the aims of physical education ? Explain with suitable examples.

2. What are the theories of play ? Explain the Surplus energy theory of play in terms of physical education.
3. How can speed and strength contribution to improve sports and physical activity ? Discuss.

OR

Write short notes on any TWO :

a. South Asian Games (SAG)

b. Axiology

c. Field event

4. What is meant by Fixture (Tie-sheet) in games and sports tournament ? How would you prepare Knockout fixture for 10 teams in Inter School Kho Kho tournament?

**Group "C"** **1×12=12**

5. What is the present situation of school physical education in Nepal ? Discuss the role of Faculty of Education for the promotion of physical education and sports in Nepal.

**Group "A"** **10**

**Tick (√) the best answers. Attempt All the questions.**

1. Who is responsible for the definition "Physical education is that field of education which deals with big muscles activities and their related responses "?

a. J.F. Williams b. J.B. Nash c. J.R. Sharman d. C.A. Bucher

2. Which of the following UNESCO'S international charter has stated, "Research and evaluation are indispensible components of the development of physical education and sport "?

a. charter-6 b. charter-7 c. charter-8 d. charter-9

3. Why is a cool down exercise important after any event ?

a. To raise resting Heart Rate

b. To improve speed

c. To speed up the removal of lactic acid

d. To make muscular contractions stronger

4. Which of the following Philosophers basically emphasizes on "Physical activities are more than just physical in nature" ?
   a. Realism  b. Pragmatism  c. Naturalism  d. Existentialism
5. Which of the following physical activities is most suitable for developing social qualities among primary grade students ?
   a. Major games  b. Minor games
   c. Gymnastic activities  d. Athletic activities
6. If some students are practicing hopping exercise of Triple Jump, what kind of movement is it ?
   a. Locomotor movement  b. Non-locomotor movement
   c. Manipulative movement  d. Skill-based movement
7. How many times have the Olympic Games been cancelled due to World War since 1896 ?
   a. Never  b. Once  c. Twice  d. Three times
8. When did Nepali athletes take part in Olympics for the first time ?
   a. 1956  b. 1960  c. 1964  d. 1968
9. Which of the following nations organized 12th SAG 2016 ?
   a. India  b. Bangaladesh  c. Sri Lanka  d. Pakistan
10. Which of the following events requires Baton ?
    a. 400 m. running  b. Relay races  c. Pole vault  d. High jump

## 5. Quality of Life (Pop. Ed. 417)

### Exam. 2073

**Time : 3 hrs.** **Full Marks : 100**

**Attempt ALL the questions.**

**Group "B"** **8×7=56**

1. What do you mean by quality of life ? Discuss the importance of quality of life on health.
2. Explain PQLI and its components used in measuring quality of life.

   OR

   Explain HDI and its components used in measuring quality of life.
3. Discuss recent government efforts on child protection and quality of life.
4. Compare the status of quality of life in Nepal and other developing countries.
5. What is meant by empirical study ? List out its objectives.

   OR

   Discuss different steps in conducting empirical study for quality of life.
6. Explain importance of family welfare for maintaining quality of life.
7. Describe the recent government plan and policies on clothing.

   OR

   Describe the recent government plan and policies on education.
8. Explain morbidity and quality of life.

## Group "C" 2×12=24

9. Define fertility and discuss fertility related measures and quality of life.
10. Describe the demographic factors affecting quality of life.

OR

Describe the social factors affecting quality of life.

## Group "A" 20

**Attempt All the questions. Tick (√) the best answers.**

1. Which of the following is the human development indicators ?
   a. urbanization b. social security
   c. national income d. life expectancy
2. Which of the causes of high birth rate and large family size ?
   a. employment situation b. social values and institutions
   c. technological backwardness d. urbanization
3. Which of the following factors helps in achieving the desired quality of life ?
   a. urbanization b. socio-political system
   c. economic growth d. population growth
4. Which of the following is not population dynamics ?
   a. technology b. birth and death rate
   c. population size d. migration
5. The major problems of environmental deterioration in Nepal is due to the
   a. urbanization b. poverty
   c. industrialization d. technology
6. Which of the following economic factors affect the quality of life ?
   a. religion b. education
   c. income d. social security
7. Which of the following is a cultural pollution ?
   a. poverty b. social degradation
   c. diseases d. infertile soil
8. Which of the following is not the measurement of quality of life from physical quality of life index ?
   a. education b. employment
   c. health d. social security
9. Which 'need category' lies in the statement "someone wants to become a king" ?
   a. basic needs b. bio-physical needs
   c. psycho-social needs d. individual needs
10. Cultural attitudes, demographic, characteristics and the nature of economic activities have greater influence on
    a. male labour force participation
    b. female labour force participation
    c. young labour force participation
    d. child labour force participation

11. Which of the following factors is not responsible for environment pollution ?
a. industrialization b. deforestation
c. population growth d. urbanization

12. Labour force are mostly engaged in primary occupation in
a. Nepal b. Hong Kong c. China d. Maldives

13. Generally quality of life refers to
a. urban life b. standard of living
c. family life d. luxurious life

14. The value of human development index is
a. 0 - 1 b. 1 - 10 c. 0 - 100 d. 1 - 100

15. Which of the following index is the most important in PQLI ?
a. democratic exercises b. economic development
c. employment and income d. social security

16. Which of the following is the main cause of rapid population growth in Nepal ?
a. high birth rate b. high immigration rate
c. low death rate d. all of them

17. Self-esteem needs of a person comes under
a. ego needs b. social needs
c. physiological needs d. self-actualization needs

18. Which of the following is the major cause of human trafficking in Nepal ?
a. poverty b. sexual exploitation
c. selling vital organs of body d. all of the above

19. Which of the following factors are responsible for brain drain ?
a. push factor b. pull factor
c. recreation d. enjoyment

20. Which of the following does not come under empirical study ?
a. data collection b. data analysis
c. synthesis of discussion d. determining growth rate

## 6. Political Analysis (Pol.Sc. 417)

### Exam. 2073

**Time : 3 hrs.** **Full Marks : 100**

**Attempt ALL the questions.**

**Group "B"** **8×7=56**

1. Mention the characteristics of post-behavioural approach to the study of political science.
2. State the origin and growth of general system theory.

OR

State the characteristics of political system.

3. What is structural substitutability ?

4. What is input structure ?

OR

What is goal changing feedback.

5. Clarify the meaning of political culture.
6. Mention the role of elite in totalitarian system.

OR

Point out the concept of power and influence.

7. What are the determinants of political party ?
8. List the agents of political socialization and explain any one.

**Group "C"** **2×12=24**

9. What is political development ? Describe the crisis of political development.
10. What is national integration ? Describe the causes of disintegration.

OR

Explain the functions and role of political party.

**Group "A"** **20**

**Attempt All the questions. Tick (√) the best answers.**

1. Philosophical approach of political science is characterised as
   a. quantitative b. empirical c. normative d. psychological
2. Structural substitutability means that a given function can be performed by
   a. well defined structure b. many different structure
   c. subordinate structure d. none of the above
3. The most primary agency of socialization is
   a. school b. family c. peer group d. media
4. According to Lucian W Pye, which is not the characteristic of political development ?
   a. differentiation b. capacity c. equality d. liberty
5. Those persons are elites who
   a. belong to royal family b. rise at the top
   c. possess wealth d. participate in politics
6. Military rule lacks
   a. discipline b. legitimacy c. hierarchy d. recognition
7. Which of the following is the reflection of integration ?
   a. solidarity b. diversity c. federation d. conflict
8. Political culture is changed or maintained by the process
   a. socialization b. democratization c. communication d. development
9. Replacement of one power elites by another one is termed as
   a. revolution b. circulation c. change d. coup
10. Those who belong apolitical stratum are
    a. highly interested in politics
    b. partially involved in politics
    c. passive members of political parties
    d. totally indifferent to politics

11. In the feedback process "Lag" means
    a. a step ahead in response  b. promptness in response
    c. slowness in response  d. effectiveness of response
12. Which is not the characteristic of traditional approach ?
    a. non-comparative  b. descriptive
    c. idealist  d. intragative
13. Almond and Powell had given more importance to
    a. structure than function  b. function than structure
    c. equal importance to the both  d. none of the above
14. Maintenance and change of political system depends on
    a. input  b. output  c. conversion  d. feed-back
15. The distinctive quality of political system is
    a. boundary  b. environment
    c. coercion  d. inter-dependence
16. Interest articulation is the major function of
    a. pressure groups  b. political parties
    c. bureaucrats  d. citizens
17. According to Robert A. Dahl, those persons who are involved in decision making process are called
    a. powerful  b. power seeker
    c. political  d. apolitical
18. Structural functional analysis is related to
    a. David Easton  b. Harold Lasewell
    c. Robert A. Dahl  d. Gabrial Almond
19. David Easton is related to
    a. input output analysis  b. communication theory
    c. structural functional analysis  d. distributive analysis
20. Well functioning of participant culture is possible in
    a. totalitarian system  b. traditional society
    c. democratic society  d. autocratic society

## Minor Subjects Specialization (418/419)

### 1. नेपाली कथा र उपन्यास (नेपा. शि. ४१८)

**Exam. 2073**

**Time : 3 hrs.** **Full Marks : 100**

**सबै प्रश्नहरूको उत्तर दिनुहोस् ।**

**समूह "ख"** ८×७=५६

१. कथामा रचनाविधान भन्नाले के बुझिन्छ ? प्रस्ट पार्नुहोस् ।

२. आधुनिक नेपाली कथाका मुख्य मुख्य प्रवृत्ति उल्लेख गर्नुहोस् ।

अथवा

'सहीद' कथाका आधारमा गुरुप्रसाद मैनालीलाई चिनाउनुहोस् ।

३. 'शत्रु' कथाको मनोवैज्ञानिक सन्दर्भ प्रस्तुत गर्नुहोस् ।

४. आयामिक कोणबाट 'एउटा विचारको यात्रापथ' कथाको समीक्षा गर्नुहास् ।

अथवा

'लाहुरी भैंसी' कथामा प्रयुक्त सामाजिक पक्षको चित्रण गर्नुहोस् ।

५. सप्रसङ्ग व्याख्या गर्नुहोस् :
खाएको बिख पो लाग्छ हजूर, नखाएको बिख लाग्न नपर्ने हजूर ।

६. 'थैले खत्रीको इतिहास' कथामा प्रयोग भएको भाषाशैलीको चर्चा गर्नुहोस् ।

७. 'निद्रा आएन' कथामा कुन पात्रको कस्तो मनोविज्ञानको विश्लेषण गरिएको छ ? चर्चा गर्नुहोस् ।

८. 'भोक र भित्ताहरू' उपन्यासको सामाजिक सन्दर्भ प्रस्तुत गर्नुहोस् ।

अथवा

ध्रुवचन्द्र गौतमका औपन्यासिक प्रवृत्तिहरू केलाउनुहोस् ।

समूह "ग" २×१२=२४

९. 'मुलुकबाहिर' उपन्यासमा नेपालीहरू काम र मामको खोजीमा बाहिरिनु पर्नाका कारणहरूको सविस्तार चर्चा गर्नुहोस् ।

१०. शिरीषको उपन्यासमा देखिने विसङ्गतिका सन्दर्भहरूको समीक्षा गर्नुहोस् ।

अथवा

उपन्यासकार विश्वेश्वरप्रसाद कोइराला र दौलत विक्रम विष्टका प्रवृत्तिहरूको तुलनात्मक समीक्षा गर्नुहोस् ।

समूह "क" २०

सबै प्रश्नहरूको उत्तर दिनुहोस् । सर्वोपयुक्त उत्तरमा रेजा चिह्न (√) लगाउनुहोस् ।

१. 'कथा एउटा यस्तो कथात्मक कृति हो जुन छोटो हुनाले एक बसाइमै पढेर सिध्याउन सकिन्छ' यो भनाइ कसको हो ?
क. एडलर एलेन पो ख. ई.एम. फोर्स्टर
ग. हडसन घ. एच.जी. वेल्स

२. कथामा दृष्टिविन्दु निर्धारण गर्ने आधार कुन हुन सक्छ ?
क. कथा सामग्रीको प्रकृति ख. तत्त्वगत सन्दर्भ
ग. परिवेश सन्दर्भ घ. कथाको आयाम

३. माध्यमिक कालीन नेपाली कथाको प्रवृत्ति कुन हो ?
क. चेतनप्रवाह शैली ख. स्वैरकल्पना
ग. अलौकिक प्रेमप्रसङ्ग घ. काल्पनिकता

४. कथामा कथानक तत्त्वको ह्रास कुन धाराको विशेषता हो ?
क. प्रयोगवादी धारा ख. प्रगतिवादी धारा
ग. सामाजिक यथार्थवादी धारा घ. आलोचनात्मक यथार्थवादी धारा

५. मानवतावादी कथा सिर्जनाको श्रेय कसलाई प्राप्त भएको छ ?
क. पारिजात ख. विश्वेश्वरप्रसाद कोइराला
ग. गुरुप्रसाद मैनाली घ. मदनमणि दीक्षित

६. इन्द्रबहादुर राई कुन धाराको सुत्रपात गर्ने कथाकार हुन् ?
क. प्रयोगवाद ख. प्रगतिवाद ग. फ्रायडवाद घ. यथार्थवाद

७. विश्वेश्वरप्रसाद कोइरालाको अभीष्ट के हो ?
क. सामाजिकता ख. मनोविज्ञान ग. चिन्तनशीलता घ. वर्गीयता

८. 'माछो माछो भ्यागुतो' कस्तो कथा हो ?
क. प्रयोगधर्मी ख. परम्परित ग. यौनिक घ. जीवनवादी

९. भवानी भिक्षुका कथाको भाषा कस्तो हुन्छ ?
क. परिष्कारपूर्ण ख. हिन्दी-अवधि मिश्रित
ग. अस्पष्ट घ. संस्कृतनिष्ठ